BILL NO. S-89-10-21

SPECIAL ORDINANCE NO. S-166-89.

AN ORDINANCE approving the awarding of Reference #886 by the City of Fort Wayne, Indiana, by and through its Department of Purchasing and **CUES, INC.**, for the Water Pollution Control Maintenance Department.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF FORT WAYNE, INDIANA;

SECTION 1. That Reference #886 between the City of Fort Wayne, by and through its Department of Purchasing and **CUES, INC.**, for the Water Pollution Control Maintenance Department, respectfully for:

> **the purchase of a TV truck for the Water Pollution Control Maintenance Department;**

involving a total cost of One Hundred Sixty-Four Thousand Five Hundred and no/100+/- Dollars ($164,500.00), all as more particularly set forth in said Reference #886 which is on file in the Office of the Department of Purchasing, and is by reference incorporated herein, made a part hereof, and is hereby in all things ratified, confirmed and approved.

SECTION 2. That this Ordinance shall be in full force and effect from and after its passage and any and all necessary approval by the Mayor.

Thomas C. Henry
Councilmember

APPROVED AS TO FORM
AND LEGALITY

J. Timothy McCaulay
J. Timothy McCaulay, City Attorney

REF. NO.:	886
DEPT.:	WPC MAINTENANCE
DATE:	10/5/89
ITEM/SERV.:	TV TRUCK

PURCHASING INFORMATION

ADVERTISED BID:	YES
DATES ADVERTISED:	8/10/89 & 8/17/89
OPENING DATE:	8/31/89
WRITTEN QUOTE:	
DUE DATE:	
VERBAL QUOTE:	
SINGLE SOURCE:	
NO. OF VENDORS NOTIFIED:	7
NO. OF VENDORS RECEIVING BID:	4
NO. OF VENDORS RETURNING BID:	1
NO. OF VENDORS DISQUALIFIED:	0
NO. OF VENDORS NOT RESPONDING:	6
DATE SENT TO DEPT FOR RECOMM.:	9/5/89
DATE RECOMMENDATION REC'D IN PURCH:	10/4/89
COUNCIL INFORMATION	DATES SENT ADD'L INCREASE
DATE INFO SENT TO LAW DEPT.:	10/5/89
INTRODUCTION DATE:	10/10/89
DISCUSSION DATE:	10/17/89
PASSAGE DATE:	10/24/89
ORDINANCE NO.:	

AMOUNT APPROVED AND/OR SPENT
LAST YEAR: (IF APPLICABLE)

Read the first time in full and on motion by Henry, seconded by Bradbury, and duly adopted, read the second time by title and referred to the Committee on City Utilities (and the City Plan Commission for recommendation) and Public Hearing to be held after due legal notice, at the Council Conference Room 128, City-County Building, Fort Wayne, Indiana, on _____, the _____, day of _____, 19____, at _____ o'clock ____.M.,E.S.T.

DATED: 10-10-89.

Sandra E. Kennedy
SANDRA E. KENNEDY, CITY CLERK

Read the third time in full and on motion by Henry, seconded by Schmidt, and duly adopted, placed on its passage. PASSED ~~LOST~~ by the following vote:

	AYES	NAYS	ABSTAINED	ABSENT
TOTAL VOTES	9			
BRADBURY	✓			
BURNS	✓			
EDMONDS	✓			
GiaQUINTA	✓			
HENRY	✓			
LONG	✓			
REDD	✓			
SCHMIDT	✓			
TALARICO	✓			

DATED: 10-24-89

Sandra E. Kennedy
SANDRA E. KENNEDY, CITY CLERK

Passed and adopted by the Common Council of the City of Fort Wayne, Indiana, as ~~(ANNEXATION)~~ ~~(APPROPRIATION)~~ (GENERAL) (SPECIAL) ~~(ZONING MAP)~~ ORDINANCE ~~RESOLUTION~~ NO. S-166-89.

on the 24th day of October, 19 89,

ATTEST: Sandra E. Kennedy
SANDRA E. KENNEDY, CITY CLERK

SEAL

Charles S. Redd
PRESIDING OFFICER

Presented by me to the Mayor of the City of Fort Wayne, Indiana, on the 25th day of October, 19 89, at the hour of 11:20 o'clock A.M.,E.S.T.

Sandra E. Kennedy
SANDRA E. KENNEDY, CITY CLERK

Approved and signed by me this 30th day of October, 19 89, at the hour of 3:00 o'clock P.M.,E.S.T.

Paul Helmke
PAUL HELMKE, MAYOR

INVITATION TO BID
DEPARTMENT OF PURCHASING
CITY OF FORT WAYNE, ALLEN COUNTY, INDIANA
ONE MAIN STREET - ROOM 350
219-427-1101

BID OPENING DATE: August 31, 1989 BID REFERENCE #886

BIDS SHOULD BE DELIVERED TO DEPARTMENT OF PURCHASING, ROOM 350, CITY-COUNTY BUILDING UP TO 11:00 A. M., ON OR BEFORE OPENING DATE.

SEALED BIDS WILL BE OPENED PUBLICLY AT 11:01 A.M. IN THE BOARD OF WORKS AND SAFETY CONFERENCE ROOM ON THE THIRD FLOOR OF THE CITY-COUNTY BUILDING. "NO LATE BIDS WILL BE ACCEPTED AFTER 11:00 A.M. FOR ANY REASON WHATSOEVER."

THIS INVITATION FOR BID IS FOR TV Inspection and Sealing System, Single Conductor, Color, Truck Mounted

AND REQUESTED BY W P C Maintenance.

PLEASE RETURN THIS FORM AND/OR ANY OF THE OTHER FORMS AS REQUESTED ON THE THE SHEET OF CONTENTS WITH YOUR SEALED BID.

THIS BID REQUIRES A XX 5% BID BOND, CERTIFIED CHECK, OR CASHIER'S CHECK OF ALL BIDDERS.

THIS BID REQUIRES A XX 100% PERFORMANCE BOND OF SUCCESSFUL BIDDER(S).

* PROMPT PAYMENT DISCOUNTS WILL BE ALLOWED AS FOLLOWS: NA %
IF PAID WITHIN NA DAYS.

THE CITY OF FORT WAYNE IS EXEMPT FROM FEDERAL EXCISE AND INDIANA STATE SALES TAX. THE CITY'S INDIANA SALES TAX EXEMPTION CERTIFICATE NUMBER IS 356-001-255-0013. PRICES SHOULD NOT INCLUDE THESE TAXES.

THE EXECUTION HEREOF BY THE BIDDER IS ACCEPTANCE OF ALL TERMS AND CONDITIONS HEREIN AND IN THAT REGARD THE BIDDER AGREES TO BE BOUND BY SAME AND BE BOUND TO THE AMOUNT OF HIS/HER BID FOR A PERIOD OF NINETY (90) DAYS.

*Standard Terms
Net 30 Days

FIRM NAME CUES, Inc.

STREET ADDRESS 3501 Vineland Road

CITY Orlando, FL 32811

BY Walter F Huber PHONE 800/327-7791
REPRESENTATIVE SIGNATURE

/XX/ 11. PERFORMANCE BOND. The successful bidder, at the time of signing the contract will be required, at his own expense, to furnish a bond guaranteeing faithful execution of the contract, in full amount of the contract price, executed by the bidder and a surety company admitted to do business in Indiana, on the bond form provided or approved by the City. The Performance Bond shall contain the following clause: "The said Surety, for value received, hereby stipulates and agrees, that no change, extension of the time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the contract, or to the work or specification.

/XX/ 12. COUNCILMANIC APPROVAL AND RATIFICATION OF CONTRACT. This agreement, although executed on behalf of the City by the Mayor and the Purchasing Agent shall not be binding upon the City unless and until the contract has been ratified and approved by the Common Council of the City of Fort Wayne, Indiana. If the Common Council fails to approve the contract within ninety (90) days after the date of bid opening, then the contractor shall not be bound to the contract unless he/she/it elects to be so bound.

CNA INSURANCE COMPANIES

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That we

CUES, INC., ORLANDO, FLORIDA ----------, Principal,
and CONTINENTAL CASUALTY COMPANY ----------Surety, are held and firmly bound unto
CITY OF FORT WAYNE, DEPARTMENT OF PURCHASING
ONE MAIN ST., RM 350, FORT WAYNE, INDIANA ----------, Obligee,
in the sum of

Five Percent of the amount bid in ---------- Dollars ($ ******5%*******)
for the payment of which we bind ourselves, our legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted or is about to submit a proposal to Obligee on a contract for

TO SUPPLY A T.V. INSPECTION & SEALING SYSTEM-SINGLE CONDUCTOR-
COLOR TRUCK MOUNTED
Bid #886

NOW, THEREFORE, if the said contract be awarded to Principal and Principal shall, within such time as may be specified, enter into the contract in writing and give such bond or bonds as may be specified in the bidding or contract documents with surety acceptable to Obligee; or if Principal shall fail to do so, pay to Obligee the damages which Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this obligation shall be void; otherwise to remain in full force and effect.

Signed, sealed and dated this 31st day of AUGUST, 1989

CUES, INC.
By: Walter F. Huber (Seal)
Principal
Walter F. Huber, Vice President
CONTINENTAL CASUALTY COMPANY
by Charles T. Wright
Attorney-in-Fact
Charles T. Wright

G-23054-A

CNA INSURANCE COMPANIES

CNA Plaza, Chicago, Illinois 60685

Letter of Intent

Date: August 21, 1989

City of Fort Wayne
Department of Purchasing
One Main Street - Rm 350
Fort Wayne, Indiana

Re: Cues, Inc., Orlando, Florida
Project: To Supply a T.V. Inspection & Sealing System-Single Conductor-Color Truck Mounted Bid #886

Gentlemen:

We understand that Cues, Inc. intends to submit to you on Aug. 31, 1989 its bid for general work on the captioned project. This is to advise you that in the event the bid of Cues, Inc.. for this work is accepted, a contract is awarded and Cues, Inc. so requests us, we will issue in your favor performance and / or payment bond on our form, as required, covering said work.

Very truly yours,

Charles. T. Wright
Attorney-in-Fact

CNA
For All the Commitments You Make

AN ILLINOIS CORPORATION

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men by these Presents, That CONTINENTAL CASUALTY COMPANY, a corporation duly organized and existing under the laws of the State of Illinois, and having its principal office in the City of Chicago, and State of Illinois, does hereby make, constitute and appoint John B. Abrahms, Marc C. Abrahms, Howard C. Jackson, Charles T. Wright, Individually

of West Hartford, Connecticut

Its true and lawful Attorney-in-fact with full power and authority hereby conferred to sign, seal and execute in its behalf bonds, undertakings and other obligatory instruments of similar nature

Provided no one bond, instrument or other undertaking exceeds the sum of $500,000.00 (Five Hundred Thousand Dollars).

and to bind CONTINENTAL CASUALTY COMPANY thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of CONTINENTAL CASUALTY COMPANY and all the acts of said Attorney, pursuant to the authority hereby given are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article IX—Execution of Documents

Section 3. Appointment of Attorney-in-fact. The President or a Vice President may, from time to time, appoint by writtencertificates attorneys-in-fact to act in behalf of the Company in the excecution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The President or any Vice President or the Board of Directors may at any time revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 3rd day of April, 1957.

"Resolved, that the signature of the President or Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 3 of Article IX of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power, and any power or certificate bearing such facsimile signatures and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

In Witness Whereof, CONTINENTAL CASUALTY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 14th day of November 19 88

CONTINENTAL CASUALTY COMPANY

CONTINENTAL CASUALTY COMPANY CORPORATE SEAL 1897

State of Illinois } ss
County of Cook }

J. E. Purtell Vice President.

On this 14th day of November 19 88, before me personally came J. E. Purtell, to me known, who, being by me duly sworn, did depose and say: that he resides in the Village of Glenview, State of Illinois; that he is a Vice-President of CONTINENTAL CASUALTY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said Corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

Linda C. Dempsey NOTARY PUBLIC Cook Co., Ill.

Linda C. Dempsey Notary Public.

My Commission Expires November 12, 1990

CERTIFICATE

I, Robert E. Ayo, Assistant Secretary of CONTINENTAL CASUALTY COMPANY, do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that Section 3 of Article IX of the By-Laws of the Company and the Resolution of the Board of Directors, set forth in said Power of Attorney are still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said Company this 31st day of AUGUST 19 89

CONTINENTAL CASUALTY COMPANY CORPORATE SEAL 1897

Robert E. Ayo Assistant Secretary

Form 1-23142-B

INV. NO. G-57443-B

The undersigned, on behalf of CUES, Inc., does hereby make the following representations to the City of Fort Wayne, Indiana.

WHEREAS, it is acknowledged that the Common Council of the City of Fort Wayne, Indiana, has passed an ordinance condemning the apartheid policies of the country of South Africa;

WHEREAS, Council's ordinance requires that all persons, firms or corporations submitting bids to the City, for goods and services, certify, as part of the bid, that such entity does not support the policies of apartheid in South Africa.

The undersigned states, on behalf of CUES Inc., that He does not support or endorse the policy of apartheid in South Africa.

IN WITNESS WHEREOF, this Certification has been signed this 29th day of August, 1989.

CUES, Inc.
(Name of Bidder/Vendor)

Walter J. Thiem
(Name and Title of Person Signing)

CUES, Inc.

3501 Vineland Road
Orlando, Florida 32811-6484
Telephone 407/849-0190
TWX 810-850-4139
FAX 407-425-1569

August 29, 1989

Department of Purchasing
City of Ft. Wayne
One Main Street - Room 350
Ft. Wayne, IN

Dear Sir:

Attached is our bid (Reference # 886) for a TV Inspection and Sealing System, Single Conductor, Color, Truck Mounted. Our bid meets the intent of your TV Seal specifications but we have listed some clarifications and Deviations to the truck dimensions for your review. Non Stock trucks and bodies extend delivery time and increase the costs. In addition to the options on the bid page, we have listed several other options for your consideration.

CUES has provided a demonstration of our equipment at Ft. Wayne prior to the bid opening as required. Additionally, we have provided the lists of users on all items as required in the specifications.

We appreciate the opportunity to bid this equipment and look forward to assisting the City of Ft. Wayne in continuing your sewerline Television Inspection and Joint Sealing Program. Our Midwest Regional Sales Manager, Mr. Don Feder, will be in contact with you to review the bid and answer any questions you may have. Please call us toll free in Orlando 800/327-7791 if we can supply any additional information.

Sincerely,

CUES, Inc.

Walter F. Huber
Vice President and General Sales Manager

WFH/jf

cc: Don Feder
Tom Haas

City of Ft. Wayne, IN
Information to be Supplied

CUES Field Service will include Field Training by a qualified technician and then 2 follow-up service calls by this technician during the first year. Subsequently a Field Service Technician will make an annual courtesy call and will be available for scheduled retraining, troublshooting, field repair etc. at CUES Field Service rates. The Service Technician operates out of a van that is equipped with frequently used CUES parts.

CUES Factory Parts and Service Center includes:

- Toll free numbers
- 2 Qualified people handling phone in parts and service orders.
- 2 Service advisers for equipment troubleshooting, parts and service advice and technical assistance.
- 4 Electronic and Mechanical Service Technicians for repair service. Includes complete Test Bench Facilities.
- 3 Specially trained shipping personnel for parts shipments.

CUES LOANER EQUIPMENT AGREEMENT

A. LOANER EQUIPMENT IS AVAILABLE TO ALL CUES CUSTOMERS SUBJECT TO THE FOLLOWING CONDITIONS:

1. THE CUSTOMER MUST HAVE PURCHASED FROM CUES THE UNIT FOR WHICH LOANER EQUIPMENT IS BEING REQUESTED.

2. THE LOANER EQUIPMENT IS SUBJECT TO AVAILABILITY. MAXIMUM EFFORT WILL BE MADE BY CUES TO MAINTAIN AN ADEQUATE INVENTORY OF LOANER UNITS. ALL LOANER EQUIPMENT WILL BE BLACK AND WHITE.

3. LOANER EQUIPMENT IS NOT AVAILABLE FOR CUSTOMER EQUIPMENT ON WHICH REPAIR ACTIONS HAVE BEEN TAKEN BY FACILITIES OTHER THAN CUES, UNLESS SUCH ACTIONS HAVE BEEN PREVIOUSLY AUTHORIZED BY THE CUES SERVICE FACILITY.

4. THE CUSTOMER MUST PAY ALL TRANSPORTATION CHARGES ON THE LOANER EQUIPMENT AND INSURE IT AGAINST LOSS FOR LIST VALUE UNLESS OTHERWISE MUTUALLY AGREED BETWEEN CUES AND THE CUSTOMER. AIR FREIGHT WILL BE THE METHOD OF SHIPMENT WHENEVER POSSIBLE.

5. THE CUSTOMER IS RESPONSIBLE FOR ANY LOSS OR DAMAGE TO THE LOANER EQUIPMENT WHILE IN HIS POSSESSION AND DURING RETURN TRANSIT TO CUES. NECESSARY REPAIRS WILL BE BILLED AT THE CURRENT RATE PER HOUR, PLUS PARTS. IF DAMAGE OCCURS DURING RETURN TRANSIT, THE CUSTOMER MUST FILE THE NECESSARY CLAIMS WITH THE SHIPPING COMPANY. CUES WILL BE RESPONSIBLE FOR FREIGHT DAMAGE AND LOSS WHILE IN TRANSIT TO THE CUSTOMER.

6. STANDARD OPERATING PROCEDURE WILL BE FOR CUES TO SHIP AIR FREIGHT THE LOANER EQUIPMENT (IF AVAILABLE) BASED UPON THE CUSTOMER'S TELEPHONE REQUEST. IT IS THE CUSTOMER'S RESPONSIBILITY TO SHIP THE EQUIPMENT FOR WHICH THE LOANER IS REQUESTED TO CUES BY AIR FREIGHT NO LATER THAN 24 HOURS AFTER THE LOANER REQUEST IS MADE.

7. ONCE THE EQUIPMENT IS REPAIRED AND RETURNED TO THE CUSTOMER VIA AIR FREIGHT, IT BECOMES THE CUSTOMER'S RESPONSIBILITY TO RETURN CUES LOANER EQUIPMENT WITHIN (5) FIVE DAYS. IF THE CUSTOMER FAILS TO DO SO, THE LOANER EQUIPMENT WILL BE CONSIDERED RENTAL EQUIPMENT AND BILLED AT THE RATES LISTED LATER.

8. IN THE EVENT THE CUSTOMER'S EQUIPMENT IS DEFECTIVE BEYOND THE POINT OF REPAIR, OR, THE REPAIR ACTION WILL EXCEED 15 DAYS AFTER RECEIPT AT THE CUES FACILITY; DUE TO CIRCUMSTANCES BEYOND CUES' CONTROL, CUES WILL INFORM THE CUSTOMERS SO THAT, IF NECESSARY, A NEW REPLACEMENT UNIT CAN BE PURCHASED. UNDER THESE CIRCUMSTANCES, A LOANER REPLACEMENT WILL BE AVAILABLE WITHOUT CHARGE FOR 15 DAYS AFTER SHIPMENT OF THE LOANER. BEYOND 15 DAYS, THE LOANER EQUIPMENT WILL BE CONSIDERED RENTAL EQUIPMENT AND BILLED AT THE RATES AS SET FORTH BELOW.

9. IN THE EVENT YOU AS A CUSTOMER DO NOT MEET YOUR OBLIGATION IN RETURNING EITHER THE EQUIPMENT TO BE REPAIRED OR THE CUES LOANER EQUIPMENT PER THIS AGREEMENT, YOU WILL BE DETERMINED INELIGIBLE FOR THE CUES LOANER EQUIPMENT.

B. IN THE EVENT RENTAL ON LOANER EQUIPMENT MUST BE CHARGED, THE FOLLOWING RATES WILL APPLY:

TV SEWER CAMERA	$60.00	PER DAY
14" INDUSTRIAL MONITOR	25.00	" "
POWER CONTROL UNIT	30.00	" "
DATA VIEW UNIT	40.00	" "
VIDEO TAPE RECORDER	35.00	" "
POSATRYN PANEL	20.00	" "
QUICK TEST STAGING PANEL	10.00	" "
POWER WINCH CONTROLLER	10.00	" "
POWER REEL CONTROLLER	15.00	" "
FOOTAGE HEAD ASSEMBLY	10.00	" "

(NOTE: OTHER LOANER EQUIPMENT AS MAY BECOME AVAILABLE SHALL HAVE A DAILY RENTAL RATE BASED ON 1% OF THE LIST PRICE PER DAY.)

ALL PRICES ARE F.O.B. THE CUES FACILITY. THE DAY OF SHIPMENT TO THE CUSTOMER AND THE DAY OF RETURN OF THE EQUIPMENT TO THE SHIPPING POINT ARE INCLUDED AS LOANER USE DAYS.

C. THIS AGREEMENT SHALL BECOME EFFECTIVE WHEN SIGNED BY AN AUTHORIZED REPRESENTATIVE OF CUES.

D. THIS AGREEMENT IS NOT TRANSFERABLE.

E. LOANER EQUIPMENT PRIVILEGES MAY BE REVOKED OR SUSPENDED IN THE EVENT THE CUSTOMER BECOMES DELINQUENT IN FINANCIAL OBLIGATION TO CUES, OR, FAILS TO COMPLY WITH THE PROVISIONS OF THIS AGREEMENT.

F. ALL LEGAL EXPENSES INVOLVED IN THE RETURN OF CUES PROPERTY OR COLLECTION OF FUNDS FOR RENTAL OF EQUIPMENT WILL BE THE RESPONSIBILITY OF THE CUSTOMER.

CUES, INCORPORATED

ACORD CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY): 4/26/89

PRODUCER

Abrahms Agency, Inc.
P.O.Box 17366 335 No.Main St.
West Hartford,CT 06117
203-233-9831

INSURED

Cues, Inc.
3501 Vineland Road
Orlando
FL 32811

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGES

COMPANY LETTER	A	CNA
COMPANY LETTER	B	Chubb
COMPANY LETTER	C	
COMPANY LETTER	D	
COMPANY LETTER	E	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	ALL LIMITS IN THOUSANDS
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [ ] OCCURRENCE OWNER'S & CONTRACTORS PROTECTIVE	R/400975898	3/01/89	3/01/90	GENERAL AGGREGATE $ 2000 PRODUCTS-COMP/OPS AGGREGATE $ 1000 PERSONAL & ADVERTISING INJURY $ 1000 EACH OCCURRENCE $ 1000 FIRE DAMAGE (ANY ONE FIRE) $ 50 MEDICAL EXPENSE (ANY ONE PERSON) $ 5
A	AUTOMOBILE LIABILITY X ANY AUTO X ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS [ ] GARAGE LIABILITY	R/200975899	3/01/89	3/01/90	CSL $ 1,000 BODILY INJURY (PER PERSON) $ BODILY INJURY (PER ACCIDENT) $ PROPERTY DAMAGE $
B	EXCESS LIABILITY X [ ] OTHER THAN UMBRELLA FORM	R/79650453	3/01/89	3/01/90	EACH OCCURRENCE $ 10,000 AGGREGATE $ 10,000
A	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY	R/WC000975900	3/01/89	3/01/90	STATUTORY $ 100 (EACH ACCIDENT) $ 500 (DISEASE-POLICY LIMIT) $ 100 (DISEASE-EACH EMPLOYEE)
	OTHER				"LIMITS AT POLICY INCEPTION"

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / RESTRICTIONS / SPECIAL ITEMS

CERTIFICATE HOLDER

×

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER, NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

042102000

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City of Ft. Wayne, In
Additional Optional Items

E. Substitute a Multi Conductor Sewerline Television Inspection and Joint Sealing System in lieu of the Single Conductor specified and bid. The Lateral Inspection System can be used with a Multi Conductor System only.

Deduct $3,500.00

F. Multi Conductor Radial View type color Camera as an additional camera.

Add On $23,500.00

G. Substitute a Special 16' Interior Loadspace Truck in lieu of the 15 foot bid. Delivery time will be extended to 180 days. Supply most special interior requirements subject to approval of a layout drawing from CUES.

Add On $7,900.00

H. Delete each set communication system - 2 headsets and cord w/reel.

Deduct $700.00 ea

I. Delete confined space entry systems.

Deduct $1,100.00 ea

J. Deduct for steel armored repair kits.

Deduct $100.00 ea

K. Deduct for Sewer Plugs.

Total Package Deduct $3,000.00

L. Delete Chemical Disposal Kits.

Deduct $150.00 ea

M. Delete Y Eliminators

Deduct $130.00 ea

N. Delete Dummy Plugs.

Deduct $25.00

O. Delete TV Cable Steel Armor Repair Kits.

Deduct $100.00 ea

P. Laptop Inspection System to include:
WCMS Wastewater Management System
LTIS Laptop TV Inspection System Site Licensing
Zenith 184 Computer
Laplink
On-Site training and installation
Service and Maintenance
Data General Interface

Add On $29,850.00*

*Does not include office computer, monitor, printer etc.

Prescribed by the State Board of Accounts

Form No. 93 (Revised 1987)

BID, OFFER OR PROPOSAL FOR SALE OR LEASE OF MATERIALS

(Defined at I.C. 36-1-2-9.5)
(Please type or print)

Date: August 29, 1989

1. Governmental Unit: Ft. Wayne
2. County:
3. Bidder (Firm): CUES, Inc.
   Address: 3501 Vineland Road
   City/State: Orlando, FL 32811
4. Telephone Number: 800/327-7791
5. Agent of Bidder (If applicable): NA

Pursuant to notices given, the undersigned offers bid(s) to Ft. Wayne (Governmental Unit) in accordance with the following attachment(s) which specify the class or item number or description, quantity, unit, unit price and total amount.

The contract will be awarded by classes or items, in accordance with specifications. Any changes or alterations in the items specified will render such bid void as to that class or item. Bidder promises that he has not offered nor received a less price than the price stated in his bid for the materials included in said bid. Bidder further agrees that he will not withdraw his bid from the office in which it is filed. A certified check or bond shall be filed with each bid if required, and liability for breach shall be enforceable upon the contract, the bond or certified check or both as the case may be.

Walter J Thurber
Signature of Bidder or Agent

BID OFFER OR PROPOSAL

Attach separate sheet listing each item bid based on specifications published by governing body. Following is an example of the bid format:

Class or Item	Quantity	Unit	Description	Unit Price	Amount

NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA)
) SS:
ORANGE COUNTY)

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

CUES, Inc.
Bidder (Firm)

Walter J Thurber
Signature of Bidder or Agent

Subscribed and sworn to before me this 29th day of August, 19 89.

My Commission Expires: October 13, 1992

County of Residence: Orange

Jeanette Fox
Notary Public

Jeanette Fox
Notary Public Printed Name

NOTARY PUBLIC, STATE OF FLORIDA AT LARGE
MY COMMISSION EXPIRES OCT. 13, 1992
BONDED THRU HUCKLEBERRY & ASSOCIATES

ACCEPTANCE

There now being sufficient unobligated appropriated funds available, the contracting authority of _____ (Governmental Unit) hereby accepts the terms of the attached bid for classes or items numbered _____ and promises to pay the undersigned bidder upon delivery the price quoted for the materials stipulated in said bid.

Date: _____

Contracting Authority Members:

_____ _____
_____ _____
_____ _____

W.P.C.M.D.
CITY UTILITIES
CITY OF FORT WAYNE

503 E. WALLACE ST.
FORT WAYNE, IN 46803
(219) 427-1255

BID PRICE PAGE
BASE BID

SINGLE-CONDUCTOR-COLOR-TELEVISION SEWER-INSPECTION/GROUTING-SYSTEM MOUNTED IN A 23' STEP VAN per the attached specifications.

BID PRICE $ 164,900.00 One Hundred Sixty four thousand Nine Hundred (Price in Words) Dollars and No Cents

DELIVERY AFTER RECEIPT OF ORDER: 90 days (Calendar)
VALIDITY OF PRICE ON BASE BID: 60 days (Calendar)

OPTIONAL ITEMS

A. TRADE-IN VALUE OF EXISTING UNIT $ 20,000.00 /Twenty thousand dollars and (Price in Words) no cents

B. RADIAL-VIEW-TYPE COLOR CAMERA per attached specifications.

BID PRICE $ 24,900.00 Twenty four thousand Nine Hundred dollars and no (Price in Words) Cents

DELIVERY AFTER RECEIPT OF ORDER: 90 days (Calendar)
VALIDITY OF PRICE ON OPTIONAL ITEM "A": 60 days (Calendar)

C. LATERAL INSPECTION UNIT per attached specifications.

BID PRICE $ 39,000.00 Thirty Nine Thousand Dollars and no cents * (Price in Words)

DELIVERY AFTER RECEIPT OF ORDER: 90 days (Calendar)
VALIDITY OF PRICE ON OPTIONAL ITEM "B": 365 days (Calendar)

D. DIESEL ENGINE (350 C.I.D. V-8)

BID PRICE $ 2,200.00 Two thousand two hundred dollars and no cents** (Price in Words)

DELIVERY AFTER RECEIPT OF ORDER: 180 days (Calendar)
VALIDITY OF PRICE ON OPTIONAL ITEM "C": 60 days (Calendar)

COMPANY NAME: CUES, Inc.
(Company Bidder's Signature)

CORPORATE SEAL:

Walter F. Huber, Vice President
(Bidder's Typed Name)

DATE: August 29, 1989
TOLL-FREE TELEPHONE NUMBER 1-800- 327-7791
* Available for operation with Multi Conductor Systems only.

** Includes separate full tank

bidder, and the right to disregard all nonconfroning, nonresponsive or conditional bids, if rejection or waiver is in its best interest.

8. Information to be Furnished by Supplier (See enclosed yellow pages)

Each supplier shall furnish the following information with its proposal: (Please check each item to indicate compliance)

A. Bid Price Page YES

B. Detailed Component List Including Spare Parts YES

C. Complete System Specifications YES

D. Literature describing all major components in detail to include all optional equipment YES

E. Photographs of a complete unit identical to the one to be supplied YES

F. Supplier information sheets attached (Pages 42, 43, 44, 45, 46, 47) YES

G. Compliance to the specifications shall be answered by a yes or no, and deviations and/or exceptions shall be clearly indicated on an attached sheet and referenced by component to aid in proper evaluation (See Page 53) YES

H. Supply full details outlining warranty (Also see Page 47) YES

I. Samples

Include with this proposal the following:

TV Cable	(6" sample)	YES
Winch Cable	(6" sample)	YES
Chemical/Air Hose	(6" sample)	YES

J. Supply full details outlining loaner policy (Also See Pages 2 & 47) YES

K. Supply full details outlining service policy including factory parts and availability of full-time staff (Technical, Order/Shipping) YES

L. Certificate of Insurance YES

9. Demonstration of the Equipment

The W.P.C.M.D. requires each supplier demonstrate the equipment they shall supply prior to bid opening. Failure to demonstrate said equipment shall be cause for disqualification of the proposal.

10. Demonstration of the Optional Equipment

The TV System shall be designed to allow for the addition of a self-propelled mobile camera transporter, a lateral inspection system and a radial view camera either at the time of the order or at some later date. Each supplier shall be prepared to demonstrate said transporter, lateral inspection system and radial view camera, if requested, prior to bid opening.

11. Aftersale Service

Following the initial delivery of and training on the equipment and during the first year of operation, the manufacturer shall make at least two follow-up service calls on the equipment. These calls shall be made by qualified training personnel who are equipped with technical equipment for servicing the equipment. They shall also have with them an adequate supply of frequently used spare parts to restock the W.P.C.M.D. inventory, if needed.

12. Patent Indemnification

The supplier shall indemnify and save harmless the W.P.C.M.D., City Utilities and City of Fort Wayne, and all City Utilities/ Civil City personnel from all suits and actions of every nature and description brought against them or any of them, for or on account of the use of patented appliances, products or processes, and it shall pay all royalties and charges which are legal and equitable. Evidence of such payment or satisfaction shall be submitted upon request of the W.P.C.M.D., CityUtilities and/or the City of Fort Wayne as a necessary requirement in connection with final execution of any contract in which such patented appliances, products or processes are used.

* * * * *SUPPLIER INFORMATION SHEETS* * * * *
* * * * *TO BE COMPLETED BY EACH BIDDER* * * * *

1-Camera Make CUES Model No. 7505500
2-Monitor Make Sony Model No. CVM1271 Size 12"
3-Video Tape Recorder Make Panasonic Model No. AG2400
4-Color TV Make See Item 2 Model No. _____ Size
5-VHS VCR Make Zenith Model No. VRF250
6-Auxiliary Monitor Make Zenith Model No. SE5261 Size
7-Generator Make Onan Model No. 6.5NHE Watts 6.5
8-Camera
Black & White _____ Color YES
Automatic Light Compensating Circuitry YES
Remote Focus YES Picture Elements 250,000+
Lines of Resolution - Horizontal 320 Vertical 350

9-TV Cable
Multi-Conductor _____ Single Steel Armored Wrap _____
Single Conductor YES Double Steel Armored Wrap YES
Length 2000 Break Strength 5600 lbs
Diameter .270 Jacket Material Stainless Steel

10-Lighting System

Small Lighthead

Pipe Size Range NA
Light Bulb Wattage _____
Max. Lumen Rating _____
No. Bulbs Used _____

Large Lighthead

Pipe Size Range 8"-30"
Light Bulb Wattage 85
Max Lumen Rating 2200
No. Bulbs Used 2

11-Winch Supplied

NA Hand Operated Winch
Cable Supplied:
Length _____
Stainless Steel _____
or steel _____
Diameter _____

NA Electric Power Winch
Cable Supplied:
Diameter _____
Length _____
Stainless Steel _____
or Steel _____

Remotely Controlled from the Operator's Station YES

Equipped with Level Wind NA Remote Clutch _____
Power Cords supplied on Reel YES
Winch Power Drive - Make NA Model _____ HP _____

Power TV Cable Reel Supplied

Remotely Controlled from Operator's Station YES
Equipped with Level Wind YES Remote Clutch YES
Transmission with Gear Selector YES
Number of Gears 5

Joint Testing/Sealing System

	YES	NO
Air Logic Controlled Fast Inflate System	YES	
Electronic Void Pressure Sensing System for Joint Testing	YES	
	YES	
Joint Air Test System	YES	
Joint Water Test System	YES	
Low Viscosity Chemical Pumping System	NA	
Hi/Low Viscosity Chemical Pumping System	YES	
System Capable of Placing ALL Gel Type Chemicals (List Number)	YES	
Wall Mounted Electric Chemical Transfer Pump	*SEE BELOW	
Pump Panel Equipped with Stroke Counter	YES	
Hoses with Stainless Steel Fittings	YES	
Stainless Steel Fittings	YES	

Packers for each of the Following Line Sizes:

8"	YES	18" - 19.5"	YES
10"	YES	21" - 24"	
12"	YES	(See Page 37)	
15"	YES		

Total Number of Packers Supplied 5

Cherne plugs for each of the following line sizes:** or Equal

6"	2
8"	2
10"	2
12"	2
15"	2
18"	2

Total Number of Cherne Plugs Supplied 12 **

* Mechanical chemical transfer pump wall mounted.

List of 20 or more municipal and/or private contractor users of Single Conductor TV Sealing Units that have been in operation three or more years and that purchased the units new from the original equipment manufacturer or his distributor.

	MUNICIPALITY/CONTRACTOR	PHONE #	MONTH & YEAR PURCHASED
1.	Rockford, S.D., IL	815/397-9700	September 1985
2.	DeKalb, IL	815/756-4881	November 1983
3.	Normal, IL	309/454-2444	May 1983
4.	Kansas City, KS	913/573-5422	July 1985
5.	Indianapolis, IN	317/353-2111	June 1985
6.	West Bend, WI	414/334-3925	August 1985
7.	Independence, MO	816/836-7161	December 1973
8.	Fairfield, Oh	513/867-5369	April 1985
9.	Louisville, KY	502/584-4658	September 1988
10.	Goodlettsville, TN	615/859-4078	July 1988
11.	Bristol, TN	615/968-9141	December 1987
12.	Chattanooga, TN	615/757-5026	March 1987
13.	Ft. Smith, AR	501/785-2801	July 1985
14.	Little Rock, AR	501/376-2903	July 1986
15.	Birmingham, AL	205/254-6315	May 1987
16.	Danville, KY	606/236-5100	March 1987
17.	Macon, GA	404/741-2623	April 1985
18.	Albany, GA	912/883-6950	September 1986
19.	Cobb Co., GA	404/423-1000	December 1986
20.	Atlanta, GA	404/653-7044	March 1984

List of 5 or more municipal and/or private contractor users of Single Conductor RVC-360-Type Camera Units that are in operation and that purchased the units new from the original equipment manufacturer or his distributor. List complete units only.

	MUNICIPALITY/CONTRACTOR	PHONE #	MONTH & YEAR PURCHASED
1.	Merrillville, IN	219/980-5220	April 1988
2.	Lake County Utility, OH	216/257-5506	January 1988
3.	Kennewick, WA	509/586-4181	October 1988
4.	Pocatello, ID	208/234-6174	September 1988
5.	Sheboygan, WI	414/459-3469	February 1988

List of 5 or more municipal/private contractor users of your lateral inspection system who can attest to its effectiveness.

	MUNICIPALITY/CONTRACTOR	PHONE #	MONTH & YEAR PURCHASED
1.	Griners A-1 Pipe	305/291-1952	February 1988
2.	Sewer Specialty	716/586-6514	May 1988
3.	Allentown, PA	215/437-7583	May 1988
4.	Henrico County, VA	804/747-4433	May 1988
5.	New England Pipe	203/265-2883	September 1986

SUPPLIER INFORMATION SHEETS

List of 5 or more municipal and/or private contractor users, of your field service that are located in Indiana who can attest to its effectiveness.

	MUNICIPALTY/CONTRACTOR	PHONE #	MONTH & YEAR PURCHASED
1.	Hammond District, IN	219/853-6413	March 1987
2.	Indianpolis, IN	317/633-5588	February 1985
3.	South Bend, IN	219/277-8515	August 1986
4.	Merrillville, IN	219/980-5220	March 1988
5.	Kokomo, IN	317/457-5509	November 1984

List of 5 municipal and/or private contractor users of your factory parts and service center who can attest to its effectiveness.

	MUNICIPALITY/CONTRACTOR	PHONE #	MONTH & YEAR PURCHASED
1.	Little Rock, AR	501/376-2903	July 1985
2.	Fairfax County, VA	703/691-2401	September 1982
3.	MEmphis, TN	901/357-1200	February 1988
4.	DeKalb County, GA	404/621-7201	January 1988
5.	Nashville & Davidson, TN	615/259-6401	November 1984

Loaner or Rental Equipment - State charges after warranty:

	During Warranty	After Warranty
Camera	$ None per day	$ None per day
System Control Unit	$ None per day	$ None per day
Monitor	$ None per day	$ None per day

Warranty - State period of time on each item:

Camera	1 Year	Auxiliary Monitor	1 Year
System Control Unit	1 Year	Data View	1 Year
Monitor	1 Year	Video Tape Recorder	1 Year

Instructions and Training

Field Training with the unit shall be 4 days: Yes X No____
Blank copy of test to be provided per page 40: Yes X No____

Service Center Location:

CUES, Inc.
3501 Vineland Road
Orlando, FL 32811
Phone 1-800-327-7791
OR Agree to Accept All Collect Calls From Owner: Yes X No____

Mobile Customer Service Van located out of Wadsworth, OH 800/327-7791
Yes X No____

TV/Seal Maintenance Tool Kit Supplied: Yes X No____

Operating Manual Supplied: Yes X No____

Systems Parts Book supporting field repair/replacement of the various components components of the delivered systems is supplied: Yes X No____

Exploded/cutaway drawingsof the numerous components/assemblies within each drawing referencing a manufacturer's part number description are supplied: Yes X No____

Operating and Maintenance Logbook, hard bound with a minimum of 50 log sheets is furnished: Yes X No____

Equipment Maintenance Log Book, hard bound with a minimum of 25 log sheets is furnished: Yes x No____

City of Ft. Wayne, IN

Bid Clarifications and Deviations

A. Truck Chassis and Body - Exterior and Interior Dimensions. Page 6,13, and 14 CUES stocks trucks with pre-built Utilimaster Bodies (Wakarusa, Indiana) and interiors. This allows the customer delivery on a shorter term basis and allows for a lower price than on custom ordered and built units. Therefore as a base bid, we are offering our standard truck with an overall dimension of 23 feet and an interior load length of 15 feet, interior width of 58" in the viewing room and 80" in the equipment room and an interior height of 77" in the viewing room and 78" in the equipment room. These stock trucks allow for some of your specifications requirements but not others which are being identified. An optional price and delivery is being provided on a 16 foot truck with a 24 foot overall length that will accomodate most of your custom requirements. The 16' interior load length and 23 foot overall length is a conflict in your specifications.

B. Interior Bulkheads page 6 and 13. We will supply our Standard Bulkheads 3/4" thick with 3/4" thick solid doors. Heavy duty hinges and keyed locks will be supplied on the doors.

C. Our air conditioner will be an 11,000 BTU Coleman with heat strip, page 6 and 14 and is in accordance with Coleman specifications.

D. The TV Cable and hose passage port is a full length lockable door built at the bottom of rear drivers side door that is 49 1/2" wide. Page 6 and 12.

E. Your specifications call for 4 sets of sound powered communications systems when only 1 is required for the truck unit. We have provided a deduct price since these systems are very expensive - (PAGE 10).

F. Your specifications call for 2 confined space entry/exit sets. We have provided an option to deduct 1 or both. Page 10.

G. Standard Insulation in the walls and ceiling on all stock bodies from Utilimaster in Wakarusa, IN is equivalent to R 6 page 12 and 14. R factors to 19 would significantly increase wall size and is not workable in our mobile van.

H. The cable and hose entry door is 9 high by 49 1/2" wide. Page 12

I. Shelves/brackets/doors and straps are supplied for normal equipment. Larger size packers along with chemical are not stowed and are loaded on the truck only as needed. Page 13

J. Cabinets
A full wall of storage cabinets with sliding doors is being supplied in the viewing room. The slide out generator enclosure acts as a base for desk top and does not allow for the drawers as specified. Wall covering in the viewing room will be Formica wood grain color to reduce glare and staining. Page 14

K. Plugs
Plugs will be an equivalent manufactured by Vanderlans and Sons. Page 38

L. A standard CUES tool kit is being supplied with a list of components attached. Page 39

M. CUES will furnish a Q-A-Log Parts Book for Spare Parts. CUES will be the source of supply for all genuine replacement parts. No other supply sources will be furnished.

N. Standard Block Diagrams on the major electronic components will be furnished or as they are available to CUES from other suppliers such as Sony or Panasonic. Some diagrams are proprietary and will require a signed statement from the City that they will be used internally only and not be given, loaned or sold to any other individual or company. Page 40

O. Certain of the spare pars are quite expensive such as the steel armored repair kits. A deduct has been supplied to reduce the quantity.

P. Due to the extent and cost of the Laptop TV Inspection System, we are not including the price in the Base bid but rather have offered it as an option. Page 7,25,26,27,28.

Specifications For:CITY OF FORT WAYNE, INDIANA
Equipment to be Furnished:

STEP VAN TRUCK MOUNTED UNIT
TV INSPECTION AND SEALING SYSTEM
HIGH/LOW VISCOSITY
SINGLE CONDUCTOR - COLOR
COMPONENT LIST

QTY	DESCRIPTION
1	TV/Seal Step Van (14,000 GVW) w/Automatic Transmission and 15' (minimum) Aluminum Body - Painted Harvester Yellow Number 409
1	TV/Seal Step Van Interior and Equipment to include:
1	Truck Interior w/Bulkheads, Cabinets, Control Desk (Counter) and Panelling
1	Back-up Alarm
1	Electrical Supply Center w/Minimum 6 Unit Circuit Breaker Box
1	Commercial Power Supply Receptacle, Cord and Plug
1	Air Conditioner Roof Mount, 120 Volt Viewing Room
1	Electric Heater, 120 Volt Viewing Room
1	Interior Light Fixture, Viewing Room, 120 Volt
1	High Intensity Desk Lamp, Wall Mounted with Switch
3	Interior Light Fixture, Equipment Room, 120 Volt
1	Spotlight with 30' Cord on Automatic Reel Mounted on Rear Door Inside
1	Exhaust Vent Fan at Chemical Tanks, Auto Louver
2	Amber Strobe Warning Beacon, Roof Mount
2	Floodlight, Rear of Truck Area Illumination
1	Auxiliary Storage Battery, 12 Volt w/Case
1	Auxiliary Automatic Battery Charger, 10 Ampere
1	Operator Chair
1	Modular Control Center Rack Mount Cabinet
1	Set Equipment Storage Brackets and Hooks
1	Fire Extinguisher 10BC Rating w/Bracket
1	Passage Port, Truck Rear Door For TV Cable and Hose
1	120 Volt 60 Hz 6500-Watt (minimum) Generator, Gasoline Powered w/Electric Start
1	Generator Remote Start/Stop Cable Assembly
1	Generator Enclosure Low Noise Fire Retardant
1	External Access Door for Generator Servicing
1	Slide Out Rail Assembly for Generator Servicing
1	Driver Side Seat with Seat Belt and Sunvisor
1	Passenger Seat with Seat Belt
1	Sunvisor Passenger Side
1	Sink and Stand, with Holding Tank, mounted in Equipment Room with Outside Drain
1	Interior Duplex mounted in Viewing Room
1	Interior Duplex mounted in Equipment Room

COMPONENT LIST

QTY DESCRIPTION

1 3" Diameter Solid State Color Sewer TV Camera w/Remote Adjustable Optical Focus, Automatic Light Compensating Iris, and Automatic White Balance Circuitry, Single Conductor, NTSC Color Standard to include:
- 1 Small Lens Cover
- 1 Large Lens Cover
- 1 Camera Storage & Transportation Case
- 1 Camera Test Cable Assembly

1 Color TV Power Control Unit-Single Conductor Modular Control Center Mount, NTSC Color Standard to include:
- 1 TV Camera Remote Optical Focus Control
- 1 TV Camera Automatic Iris Remote Control
- 1 TV Camera Circuit Testing System w/Meter
- 1 TV Camera Lighthead Intensity Control w/Meter
- 1 Video Tape Switching Module for Remote Control

1 12" Color Industrial TV Monitor, 500 Line Resolution Modular Control Center Mount, NTSC Color Standard

1 System Engineering Panel, Modular Control Center Mount with:
- 1 AC Voltmeter, Power Supply
- 1 Hertz Meter, Power Supply for 60Hz
- 1 Generator Hour Meter
- 1 Remote Generator Start/Stop Control Switch
- 1 Glow Switch for Amber Warning Beacon System

1 20" Zenith TV with Electronic Tune and Remote - Model Number SE5261

1 VHS - VCR Zenith with Remote - Model Number VRF250

1 Footage Meter w/Local Mechanical Readout and Remote Electronic Counter F/Data View

1 Data View II Data Display System, Modular Control Center Mount to include:
- 1 Data View II Alpha Numeric Information Display, 10 Lines with up to 16 Characters per Line
- 1 Data View II Remote Keypad for Data Entry

1 Video Tape Recording System to include:
- 1 Modular Control Center Tray Mount for Video Recorder
- 1 Removable Video/Audio Tape Recorder, Industrial Cassette, Black and White or NTSC Color Standard, VHS Format
- 1 AC Adapter 115-volt VTR Operation
- 1 Audio Recording Microphone
- 1 1-Hour 1/2" Recording Tape Cassette
- 1 VTR Power Supply Cable Assembly

1 Television Cable Winch/Reel w/Power Level Wind Electric Motor Drive & Multi-Ratio Manual Transmission to include:
- 1 Winch Reel Motor Controller Desk Mount at Viewing Station
- 1 Transmission Control Linkage at Viewing Station
- 1 Local Reel Mount Electrical & Mechanical Control
- 1 Sealed Continuous Contact Gold Plated Collector Assembly

COMPONENT LIST

QTY	DESCRIPTION
1	Combination TV Transmission & Double Steel Armored Tow Cable Assembly, .270 Diameter, 5600# rating-2000' Single Conductor to include:
	1 Cable Terminal Connector
	1 Terminal Connector Protective Tail Cone
	1 Cable Grip-Single Conductor
	1 3-Pin Dummy Plug
	1 3-Pin Extender Cable
	1 Tow and Tag Line Bridle Set - S.S. Armored Cable
	1 Single Conductor Cable Terminal Repair Kit
1	High Performance Lighthead w/Focused Light including
	2 Bulbs w/Reflectors for Color Camera 8-30" Pipe Sizes
	20 Spare Bulbs w/Reflectors
1	Camera Transportation Skid Set to include:
	1 8" to 30" Pipe Diameter Skid Spacer Plate Kit
	2 Bottom Stainless Steel Runners
	3 Top Stainless Steel Runners
2	Winch Power Cord Reel Assemblies w/500' Power Cord Each
1	Power Winch Motor Controller-Desk Mount at Viewing Station
1	High/Low Viscosity Multi Grout Chemical Pumping System to include:
	1 Air Motor Drive
	2 1:1 Ratio Positive Displacement SS Pumps
	1 8:1 Ratio Positive Displacement SS Pump
	2 Stainless Steel Quick Disconnect Check Valves
	1 Pump Adjustment Tool
	1 High Viscosity Liquid Positive Shut Off Valve
	1 Suction Assembly for High Viscosity Chemical
2	Chemical Tanks Non Corrosive, 30-Gallon Working Capacity Non-Pressurized w/Electric Mixers and Sight Gauges
1	Water Storage & Supply Tank 66-Gallon Capacity to include:
	1 Tank Pressure/Vent Control Panel
	1 Interior/Exterior Hose Bib Supply/Fill System
1	Quad-Passage Hose Reel, Electric Motor Powered Rewind, Multi-Ratio Manual Transmission to include:
	1 Electric Reel Drive Motor Control Reel Mount
	1 Manual Reel Transmission Control Linkage Reel Mount
	1 Quick Inflate High Speed Packer Inflation Module
	1 Quick Deflate System
1	Quad-Line Chemical/Air/Water Hose Assembly 500' to include:
	4 Hose Terminal Quick Connector SS Locking
	2 SS Check Valve Assembly Chemical Hose
	1 Posatryn Joint Testing/Sealing Adapter w/Transducer
1	Test N' Seal Control Center/Modular Control Center Mount to include:
	1 Posatryn Remote Pressure Sensing System Modular w/Digital Readout and Clock Timer 60 Hz

COMPONENT LIST

QTY	DESCRIPTION
	1 Pipe Joint Air Test System
	1 Pipe Joint Water/Liquid Test System w/Leak Rate Loss Flow Meter
	1 Sealing Control Panel w/Pump Controls and Stroke Counter
1	Air Compressor Electric Drive 7.35 CFM @ 125-psi to include:
	1 Air Receiver Assembly 30-Gallon, Mounted Under Van
	1 Air Outlet Chuck at Rear of Van
1	8" Seal Packer Assembly w/Tow Cables - Multi Grout
1	10" Seal Packer Assembly w/Tow Cables - Multi Grout
1	12" Seal Packer Assembly w/Tow Cables - Multi Grout
1	15" Seal Packer Assembly w/Tow Cables - Multi Grout
1	18" Seal Packer Assembly Compact/Collapsible w/Tow Cables
4	Batches of Chemical for Training Purposes (minimum 240 mixed gallons)
1	Box Root Retardant Chemical (12 packets)
1	Chemical Transfer Pump
1	Chemical Handling and Safety Package to include:
	3 Chemical Scoop
	3 Chemical Measuring Cup
	3 Chemical Mixing Paddles
	3 Pair Goggles
	3 Pair Gloves
	3 Respirator
	3 Chemical Waste Disposal Kit
1	Cable Manhole Guide System to include:
	2 TV Invert Pulley Assemblies
	8 Quick Lock Extension Poles
	2 Manhole Adapter Hooks
	1 Manhole Top Roller Assembly
1	Quad Hose Invert Pulley Attachment
1	Float Line 1/4" Polyurethane Braid 1000' on Reel
1	TV/Seal Maintenance Tool Kit
3	TV/Seal Operating Manuals
1	TV/Seal Systems Parts Book
1	TV/Seal Inspection-Test/Seal Recording Manual Loose-Leaf Binder to include:
	50 Inspection-Test-Seal Recording Forms
4	Days of Training
4	Communication Sets to Include:
	2 Headsets
	1 Reel with 500' of Communications Cable
2	OSHA Approved Entry/Exit Sets to Include:
	2 Tripods
	2 Full Body Harnesses
	2 Winches Rated at 600 lbs and 6" Maximum Drop
2	6" Inflatable Sewer Plugs
2	8" Inflatable Sewer Plugs
2	10" Inflatable Sewer Plugs
2	12" Inflatable Sewer Plugs
2	15 Inflatable Sewer Plugs
2	18" Inflatable Sewer Plugs

QTY DESCRIPTION

Spare Parts to Include the following:

8	Cable Connector, 3-Pin Y - Part no. 770100
12	3-Pin Dummy Protector Plug - Part no. 160533
2	3-Pin Extender Cable Assembly - Part no. 160556
8	Steel Armored Cable Terminal Repair Kits - Part no. 9501150
10	Waterproof Splice Kits - Part no. 950098
20	Spare Bulbs w/Reflectors - Part no. 210508
20	O-Rings for Lighthead Lense - Part no. 712910
20	Gasket, Front, Hi-Perf. Lighthead - Part no. 130018

PRINTED 29-Aug-89 12:02 PM ★★★ C U E S , I N C . ★
EFFECTIVITY DATE: ALL S I N G L E L E V E L B I L L S O F

PARENT PART: 0029230 KIT,TOOL SINCON TV/SEAL
ERC: SRCE CODE: A TYPE: 1

ITEM NO	COMPONENT PART NUMBER	ERC PROD.CODE	DESCRIPTION COM.CD	S C	T Y	S P	A B	P L	UM	EXTENDED QTY PER
0002	2300500		ADAPTER,CHEM HOSE BLOW-DOWN							
		PT	BKXX	A	1	P	B	F	EA	1
0003	2300510		ADAPTER,CHEM HOSE WASH-DOWN							
		PT	BKXX	A	1	P	B	F	EA	1
0004	940666	B	TOOL,ASSEMBLY FOR SINGLE COND CABLE							
		PT	BKXB	F	1	P	B	F	EA	1
0005	940624		TOOL,PLIERS RETAINER RING							
		PT	X XX	P	1	P	B	F	EA	1
0006	940607	C	TOOL,CHECK VALVE SST							
		PT	BKXB	P	1	P	B	F	EA	1
0007	9406031		TOOL,CHECK VALVE TESTER							
		PT	BKXB	A	1	P	B	F	EA	1
0008	940640		TOOL,NUT DRIVER 1/4"							
		PT	X XX	P	1	P	B	F	EA	1
0009	940550		TOOL,WRENCH PIPE 12"							
		PT	X XX	P	1	P	B	F	EA	1
0010	9500000		TOOL BOX,MAINTENANCE							
		PT	X PX	A	1	P	A	F	EA	1
0011	9501150		KIT,REPAIR TV CABLE SINCON							
		PT	BVPX	A	1	P	A	F	EA	1
0012	9502890	A	TOOL,ADJUST GROUT PUMP							
		PT	BYXA	F	1	P	B	F	EA	1
0013	130302		QUAD RING FOR 1/2" CHECK VALVE							
		PT	BRXX	P	1	P	C	F	EA	2
0014	130303		QUAD RING F/ 1/2"QUICK DISCONN							
		PT	BRXX	P	1	P	B	F	EA	2
0015	130006		QUAD RING F/ 3/8"QUICK DISCONN							
		PT	BRXX	P	1	P	C	F	EA	1
0016	114790		SWIVEL,HOSE BRASS 3/4FHT							
		PT	X XX	P	1	P	B	F	EA	1

NOTES:

END OF REPORT

PRINTED 29-Aug-89 03:53 PM — ★★★ CUES, INC. ★
EFFECTIVITY DATE: ALL — SINGLE LEVEL BILLS OF

PARENT PART: 9500000 — TOOL BOX,MAINTENANCE — UM
ERC: — SRCE CODE: A — TYPE: 1 — ABL

ITEM NO	COMPONENT PART NUMBER	ERC PROD.CODE	DESCRIPTION COM.CD	S T S A P C Y P B L UM	EXTENDED QTY PER
0001	101042		NUT,KEP 1/4-20 PLATED		
		PT	B XX	X 1 P C U EA	12
0002	103005		SCREW,CAP 1/4-20X1 SKT SST		
		PT	BKXX	X 1 P C U EA	12
0003	120011		SWAGE FOR 3/16 CABLE REPAIR		
		PT	B XX	P 1 P C F EA	2
0004	120001		SWAGE FOR 1/8 CABLE REPAIR		
		PT	BVXX	X 1 P C U EA	2
0005	120012		THIMBLE,1/4" SST FOR CABLE REPAIR		
		PT	B XX	P 1 P C F EA	1
0006	160014		NUT,WIRE 18-12 YELLOW		
		PT	X XX	X 1 P C U EA	1
0007	160015		NUT,WIRE 16-10 RED		
		PT	X XX	X 1 P C U EA	1
0008	160020		NUT,WIRE 18-16 BLACK		
		PT	X XX	X 1 P C U EA	1
0009	160021		NUT,WIRE 18-14 ORANGE		
		PT	X XX	X 1 P C U EA	1
0010	160022		CONNECTOR,BUTT 16-14		
		PT	X XX	X 1 P C U EA	12
0011	160023		CONNECTOR,BUTT 22-16		
		PT	X XX	X 1 P C U EA	6
0012	711879		FUSE,10 AMP 38G SLOW BLOW		
		PT	XKXX	X 1 P C U EA	5
0013	712404		SCREW,BIND 4-40X1/2 SST		
		PT	BYXX	X 1 P C U EA	4
0014	712419		SCREW,BIND 6-32X5/8 PL		
		PT	X XX	X 1 P C U EA	2
0015	712441		SCREW,BIND 10-32X1/2 PL		
		PT	X XA	X 1 P C U EA	2
0016	712576		TUBE,SHRINK BLACK 1/4 IN RNF		
		PT	X XX	X 1 P C U FT	1
0017	712577		TUBE,SHRINK BLACK 3/16 IN RNF		
		PT	B XX	X 1 P C U FT	1
0018	712578		TUBE,SHRINK BLACK 1/2 IN		
		PT	X XX	X 1 P C U FT	1
0019	712580		TUBE,SHRINK RED 1/8 IN RNF		
		PT	X XX	X 1 P B U FT	1
0020	440307		MRO-TIE,CABLE 3/32"X4"		
		PT	XEXX	X 1 P C U EA	10
0021	712640		RING,NO 10 18-22GA		
		PT	X XX	X 1 P C U EA	2
0022	940599		CONTAINER,SPARE PARTS		
		PT	X XX	P 1 P B F EA	1
0023	940602		KIT,TOOL ALLEN WRENCH 9 PIECE		
		PT	X XX	P 1 P B F EA	1

PRINTED 29-AUG-89 03:53 PM * * * C.U.E.S., I N C. *

EFFECTIVITY DATE: ALL S I N G L E L E V E L B I L L S O F

PARENT PART: 9500000 TOOL BOX,MAINTENANCE Um
ERC: SRCE CODE: A TYPE: 1 ABC

ITEM NO	COMPONENT PART NUMBER	ERC PROD.CODE	DESCRIPTION COM.CD	S C	T Y	S P	A B	P L	UM	EXTENDED QTY PER
0024	940601	A	TOOL,WRENCH HEX KIT 11 PIECE							
		PT		X	XX	P	1	P	B	F EA 1
0025	940205		GREASE,SILICONE 5.3 OZ TUBE							
		PT		B	EXX	P	1	P	B	F EA 1
0026	940501		TOOL,TAPE ELECTRIC							
		PT		X	XX	P	1	P	C	F EA 1
0027	950294		KIT,SOLDER IRON							
		PT		B	EXX	P	1	P	B	F EA 1
0028	940500		TOOL,MILLIAMPMETER VOLT OHM							
		PT		X	XX	P	1	P	B	F EA 1
0029	940628		PUNCH,DRIVE PIN							
		PT		X	XX	P	1	P	B	F EA 1
0030	940627		TOOL,HAMMER BALL PEEN 12OZ							
		PT		X	XX	P	1	P	B	F EA 1
0031	940634		TOOL,SCREWDRIVER FOUR IN ONE							
		PT		X	XX	P	1	P	B	F EA 1
0032	946000		TOOL, WRENCH HEX 'T'							
		PT		X	XX	P	1	P	B	F EA 1
0033	940644		TOOL,WRENCH ADJUSTABLE 10"							
		PT		X	XX	P	1	P	B	F EA 1
0034	940646		TOOL,WRENCH ADJUSTABLE 6"							
		PT		X	XX	P	1	P	B	F EA 1
0035	940643		TOOL,WRENCH SET OPEN END							
		PT		X	XX	P	1	P	B	F EA 1
0036	940632		TOOL,UNIVERSAL CRIMP							
		PT		X	XX	P	1	P	B	F EA 1
0037	940626		TOOL,PLIERS INDUSTRIAL							
		PT		X	XX	P	1	P	B	F EA 1
0038	940630		TOOL,PLIERS NEEDLE NOSE							
		PT		X	XX	P	1	P	B	F EA 1
0039	940625		TOOL,CUTTER 6" DIAGONAL							
		PT		X	XX	P	1	P	B	F EA 1
0040	940598		TOOL,BOX							
		PT		X	XX	P	1	P	B	F EA 1
0041	100125		SCREW,FIL H 10-32X3/4 NYL LIGHTHEAD							
		PT		B	RXX	X	1	P	C	U EA 6

NOTES:

END OF REPORT

DETAILED SPECIFICATIONS
STEP VAN CHASSIS - TV SEAL - AUTOMATIC TRANSMISSION

The truck chassis shall be a standard model of current manufacture and shall have a sufficient GVW rating to handle the normal on-board loads necessary to conduct the TV/Seal operation. Chassis with limited GVW that will not legally carry the weights associated with the chemical batching requirements of the Multi-Grout System, will not be acceptable.

Make	GMC or Equal
Series	P3500
Engine	
Base Equipment	5.7 Liter (350 cu. in.) 4 BBl V-8 185 net Horsepower @ 4000 RPM Bore and Stroke 4.0 X 3.48 Compression Ratio 8.3 to 1
Air Filter	Polyurethane-Wrapped Oiled Paper
Oil Filter	Throwaway Type-Heavy Duty
Oil Cooled	Standard
Exhaust System	Dual; Stainless Steel
Emission Control Systems	Meets Government Requirements
Cooling System	Heavy Duty Radiator-Cap. 3.9 Gal.
Wheelbase	157"
GVW	14,000 Minimum
Suspension Front	Leaf Springs
Axle Capacity	5,000 lb.
Springs at Ground	2,500 lb. ea.
Shock Absorbers	32 MM Diameter, Heavy Duty
Stabilizer Bar	1.25" Diameter
Suspension Rear	Heavy Duty Axle, Hypoid Drive, Two-Stage Multi-Leaf Springs
Axle Capacity	11,000 lb.
Axle Ratio	5.29
Springs, Main at Ground w/Auxiliary	5,900 lbs. ea.
Shock Absorbers	32 MM Diameter
Brakes	Hydraulic Self-Adjusting
Front and Rear	Disc 14.25" x 1.54 Rotor
Booster	Power Assist
Parking	Prop Shaft Type
Electrical	12 Volt, Negative Ground
Battery-Freedom Type	630 Cold Crank Amps
Generator	Delcotron 85 Amps
Frame	Carbon Steel 36,000 psi
Section Modulus	6.12
Fuel Tank Capacity	40 Gallon
Steering Gear Type	Integral Power
Transmission	475 3 Speed Automatic w/Oil Cooler
Tires - Front	(2) 8 X 19.5 8 Ply - D Rating
Rear	(4) 8 X 19.5 10 Ply - E Rating
Wheels	(6) 6 X 19.5 Disc

STEP VAN BODY TV/SEAL

The equipment for the Sewerline Television Inspection and Joint Sealing Equipment shall be mounted in a step van body type truck. The body shall be constructed as follows:

- Corrosion resistant aluminum exterior (.063 sides-.030 tapered roof)
- Protective aluminum exterior rub rail (125")
- Welded aluminum frame construction (.090" X 1-3/8" channels on 16" centers)
- Insulated tapered roof
- Aerodynamic front 14" radius cap
- Full 2" radius side and rear caps
- Outrigger reinforcements to strengthen the floor and reduce body flexing
- Fully undercoated
- Double rear swing doors and drip rail (rear driver door 48" - rear passenger door 32")
- Cable and hose entry door w/keyed lock
- Hand hold grip, rear entry, passenger side
- Full width sliding keyed side doors (35" width) and drip rails
- Sliding window - drivers side door
- Exterior generator access door, 40" X 37" drivers side
- Generator mounting package to include frame and sliding roll out rails for easy access, service and replacement
- Steel front bumper
- Full width rear step bumper - 10 gauge steel treadplate
- Aluminum bumper kickplate (.100") with recessed tail lights
- Low profile removable engine cover for easy internal access
- Removable front grill section for easy external engine access
- Standard lights including stop/turn, license plate, back-up and ICC running lights
- Exterior mirrors, double West Coast Wide Angle System
- Tinted windshield
- Dual windshield wiper motors and washer
- Sun visor, drivers side
- 36,000 BTU heater with 453 CFM blower - 2 speed
- Driver seat with seat belts and Sunvisor
- Cab dome light
- Extruded welded interlocking all aluminum floor
- All aluminum treadplate step wells and cab floor (.100")
- All entry doors to be furnished with heavy duty Kason (or equal) Locks keyed alike
- Paint, International Harvester Yellow number 409
- Auxiliary air conditioner (11,000 BTU) and heater (1500 watt forced air)
- Wall mounted vent fan equipment room
- Dual beacons mounted top center front and rear
- Dual night lights mounted top rear

STEP VAN BODY DIMENSIONS & INTERIOR TV/SEAL

The step van body will have the following dimensions:

Overall Length	23′	(276")	including Step Bumper
Overall Width	7′6"	(90")	minimum excl. mirrors
Overall Height	9′8"	(116")	without A/C or Beacons
	10′4"	(124")	with Beacon only
	10′8"	(128")	with A/C and Beacons
Interior Load Space	15′	(180")	minimum

The interior of the van body shall be divided into three areas of operation: driver's compartment, TV sealing control room (operator's station and viewing room) and the equipment room (equipment mounting and storage area). The electrical system shall be fully designed to sustain the complete electrical requirements of all components of the television inspection and repair system. Standard flourescent lighting and electrical outlets will be supplied in both the control and equipment rooms. Provisions shall be made for disconnection of the generator power supply and reconnection to a commerical 120 volt house power supply through an exterior connection mounted on the side of the van. A 35′ house power cord extension will be furnished. All electrical wiring and connecting hoses shall be neatly enclosed in a removable aluminum channel mounted at the wall and ceiling joint. All wiring shall be done in compliance with the National Electric Code.

CONTROL ROOM TV/SEAL

The TV Sealing Control Room shall be located toward the front of the van body and shall have the following dimensions (not including the storage cabinets); length 4′8"(56") X width 4′10" (58") X height 6′5" (77"). It shall be separated from the drivers compartment and the equipment room by bulkheads. Each bulkhead will have a 6′2" (74") high inside lockable passage door. The doors will open into the control room to minimize any obstruction. A full wall storage cabinet will be supplied (56" wide X 78" high X 12" deep) with sliding access doors. All interior walls and cabinets will be finished in wood grain formica. A desk top finished in formica along with adequate seating will be furnished for the operator in the control room. The ceiling will be finished with a laminated plastic. The floor of the control room will be covered with an industrial grade tile. The control room will be equipped with an auxiliary air conditioner and heater of standard manufacturer and shall be designed for a working temperature range of 65 degrees to 80 degrees with the outside air temperature ranging from 32 degrees to 95 degrees.

EQUIPMENT ROOM TV/SEAL

The equipment room will be located at the rear of the van body and shall have the following dimensions; length 10'4" (124") X width 6'8" (80") X height 6'6" (78"). The equipment room walls will be covered with corrosion resistant embossed aluminum sheets (.040 thickness) riveted on 16" centers. This material will lend itself to easy cleaning and will not require periodic painting. The overall thickness of the wall insulation will be 1-3/8" or an R6 equivalent. Vans that are not insulated properly or are finished in plywood only are not acceptable. All the floor and wall joints shall be caulked with a flexible sealer. The equipment room shall have fixed mounting areas for the reels, tanks, air compressor and generator. An air compressor receiver of sufficient size shall be mounted in such a location as to conserve storage space in the equipment room. The generator will be mounted and fully enclosed under the control center cabinet. The generator enclosure shall be lined with a lead coated material to retard sound and fire. The generator shall be mounted on a specially designed frame with slide out rails at the truck floor level so it can easily be serviced or removed. Generators that require access from inside the van or whose external access is at a level that requires a ladder for proper servicing, will not be acceptable. Access to the generator will be from the outside of the van through a key locked door. The equipment room will also allow sufficient storage space for downhole equipment, winches, packers, chemical, safety items and other miscellaneous equipment necessary to perform the inspection, testing and repair operation. A 12 volt recessed dome light shall be furnished with switches, located at both the rear of the van and the drivers compartment.

MODULAR CONTROL CENTER RACK MOUNT CABINET TV/SEAL

All TV and Sealing Control Components shall be of modular design and available for rack mounting at the operator's station in the control room. A specially designed enclosed cabinet will be furnished to house a 19" frame for rack mounting of the modular electronic components. The cabinet will be fully open to the control room and accessible from the equipment room through two sliding doors that can be removed. Organization of the control center components shall permit maximum operating efficiency by a single operator. The rack mounted components shall permit fast and easy inspection, adjustment, servicing, removal and replacement. Systems that use case mounted or free standing control units that are subject to damage during travel will not be acceptable.

GASOLINE GENERATOR W/ELECTRIC START - 6500 WATT

The power source for the system will be a 6500 watt alternating current gasoline powered generator. It shall be the product of a firm regularly engaged in the manufacture of gasoline powered generators. The generator shall be capable of continuously producing 6500 watts of power (54.2 amps) at 120 volts AC while rotating at 1800 RPM without undue heating, wear or vibration. The engine shall be an air cooled 4 cycle/two cylinder unit developing at least 14.0 bhp. It shall be designed to operate the generator at 60 cycles + or - 2 cps and shall be governor controlled to maintain these cycles under varying load conditions. The engine shall be equipped with an electrical starting device for local and remote start/stop, electric fuel pump and low oil pressure shutdown. The entire assembly shall be furnished with vibration isolators and a heavy duty industrial muffler to insure quiet operation.

SOLID STATE COLOR SEWER TELEVISION CAMERA - SINGLE CONDUCTOR

The color sewer television camera shall be specifically designed for operation through a minimum of 2000 feet of single conductor cable in sanitary and storm sewers. Converted studio, surveillance or underwater cameras not originally designed for high vibration and impact service shall not qualify as being equal. Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibrations normally sustained while being pulled through a pipe. The image pick-up device shall be solid state incorporating the latest technology. The camera outside diameter shall be no greater than 3 inches to allow for inspection in small size pipes. Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C.

SOLID STATE COLOR CAMERA REQUIREMENTS - SINGLE CONDUCTOR

The camera shall be capable of providing 320 lines of horizontal resolution and 350 lines of vertical resolution. The image pick-up device will contain in excess of 250,000 picture elements (pixels). Scanning shall be 525 lines, 60 fields, 30 frames, interlaces 2:1 - NTSC Color Standard. The camera shall develop a true color and transmit a sharp image picture on video bandwidths only. Picture transmission systems that require the use of R.F. suppressors and are subject to local transmitter interference shall not qualify as being equal. Full color video bandwidths shall be provided with no sacrifice of low frequency response. There shall be no visible streaking of the low frequency response. There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart. The composite video signal derived from the video camera shall be 1.0V (140 IRE Units) at the monitor after transmission through 2000' of single conductor cable. The camera shall be equipped with an automatic iris to control the illumination range for an acceptable picture between 10 and 100,000 Lux. Geometrical distorion of the image shall not exceed 2%.

CAMERA OPTICAL LENS - REMOTE CONTROLLED

The camera shall be equipped with a standard C Mount 8MM, F1.4 wide angle lens with an optical viewing angle to 70 degrees. The lens shall be an auto iris type with a manual override remotely controlled from the viewing station.

COLOR CHIP INSPECTION CAMERA - SINGLE CONDUCTOR - TECHNICAL SPECIFICATIONS

Features:

1. Remote controlled focus and iris
2. Automatic white balance
3. Low lag and high resistance to image burn-in
4. High resistance to vibration or mechanical shock
5. Precise image geometry and long life
6. Excellent color rendition and low light sensitivity
7. Image pickup devide (CCD) that has a lower random noise feature in comparison with other devices (i.e. MOS or CPD)

Electrical Specifications:

Image pick-up	Interline transfer CCD color device
Picture elements (pixels)	510 (H)x492 (V)=250,920 elements
Sensing area	8.8x6.6mm (same as 2/3 inch camera tube)
System standard	NTSC color 525 lines, 60 fields/second
Supplied lens	8mm (F1.4) with auto iris with manual override
Lens mount	Standard "C" mount 1"x32 threads
Horizontal resolution	320 lines
Vertical resolution	350 lines
S/N ratio	48db
Minimum illumination	10 lux (F1.4)
Illumination range	10-10,000 lux (1-1,000 ft. candles)
Color temperature	Auto: 2100 degrees K - 10,000 degrees K
Power requirement	Single conductor 50-150 VDC 20 watts
Video output	1.0 volt p-p 75 OHMS
Vibration	7G (11 Hz to 200 Hz)
Shock 70G	

Geometric distortion	Not to exceed 2%

CAMERA PROTECTIVE HOUSING

The camera shall be housed in an annodized, high strength, aluminum alloy tube no more than 3 inches in diameter and 22 inches in length. The aluminum housing shall be 1/4" minimum thickness and shall be treated to resist corrosion. Thinner walled aluminum or stainless steel housings that easily dent on impact will not be considered equal. The front of the housing shall have a viewport of impact resistant, distortion free optical glass. The rear of the housing shall have a recessed bell to protect the 3 pin indexed cable connector. The housing shall be fully sealed at the factory to withstand external pressures in excess of 400 psi without damage or leakage. There shall be no external mechanical adjustment ports in the housing. A small and large lens cover will be provided to protect the camera viewport after disconnection at the jobsite and during storage.

SOLID STATE COLOR CAMERA CONTROL CIRCUITRY

The color camera shall be equipped with the necessary circuitry to allow for the remote adjustment of the optical focus and automatic iris from the power control unit at the viewing station. The camera shall be equipped with the necessary circuitry to automatically white balance the color picture to the light source within a range of 2200 to 3200 degrees K. Color cameras that require manual external focus or iris adjustments shall be deemed not acceptable. The camera shall be calibrated with both color bench test and picture analysis equipment at the factory. Each camera system shall be equipped with a test cable to allow for the direct by-pass of slip rings, TV cable and any applicable connectors for testing purposes.

CAMERA STORAGE AND TRANSPORTATION CASE

A damage resistant case will be provided for the camera while it is in storage or during transport including shipping on commercial carriers. The interior of the case shall contain a styrofoam saddle and a lid installed styrofoam yoke to firmly hold the camera and protect it from damage. The case shall be equipped with metal closing latches.

COLOR TV POWER CONTROL UNIT - SINGLE CONDUCTOR

The power control unit shall provide all the necessary power and controls to operate and monitor the television inspection system. All circuits shall be of solid state design, assembled in a rack mounted chassis for installation in the modular control center. The faceplate shall be annodized, heavy gauge aluminum and shall have permanent labels designating the function or purpose of the various switches, meters and controls. The PCU shall have a back plate for all cable connectors each separately indexed and locking, and labeled as to purpose.

COLOR POWER CONTROL UNIT TECHNICAL REQUIREMENTS-SC-60 HZ

The color power control unit shall operate off of 120 VAC, 60 cycle current. The PCU shall contain a solid state lighthead power source whose input shall be through an isolation, variable voltage transformer and whose output shall be from 0 volts to 120 volts DC. A light intensity adjustment control and DC volt meter shall be provided on the front panel. Input and output of both the camera and lighthead power shall be protected by circuit breakers with indicators to identify open circuits. Circuits shall be isolated to provide operator protection from electrical shock hazards. The PCU shall be equipped with a circuit testing capability to include a multi-position selector switch and meter to quickly check or troubleshoot the systems circuits.

COLOR POWER CONTROL UNIT REMOTE CAMERA ADJUSTMENT - SC

The color power control unit will be equipped with the following remote camera adjustments:

Focus Control - A two pole switch spring loaded to off, permits the operator to adjust the camera focus for changes in pipe diameter or different views of defect conditions. In the neutral position, the camera focus will be electronically locked.

Automatic Iris Control - This control allows the operator to override the camera's automatic light compensating circuitry operating range in the event an excess of light or lack of light produces a poor picture response. With the proper adjustment, the operator can change the iris opening to compensate for the light level available thereby improving the picture response.

Systems requiring manual external camera settings or the removal of the camera from the sealed housing in the field to make these adjustments, shall be deemed not acceptable.

12" COLOR INDUSTRIAL MONITOR - MODULAR - NTSC

The on-board television viewing monitor shall be a high quality, industrial grade color unit providing in excess of 500 lines of resolution. All circuits shall be of a solid state design with the exception of the picture tube. The picture tube shall be of high resolution trinitron type or equal. The picture shall measure a minimum of 12" diagonally.

The monitor shall include voltage compensation circuits to reduce picture distortion to less than 1% under voltage conditions varying from 105V to 120V. The monitor shall be housed in a steel cabinet which acts as a shield to minimize the effects of local magnetic fields such as transformers, coils, wraps or cable, etc. Monitors that have inadequate or no protection from local magnetic fields thereby contributing to a loss of purity in the color picture will be deemed not acceptable. The monitor will be equipped with a speaker to allow for audio playback from a video tape recording.

The monitor shall be fitted with an annodized aluminum face plate designed for rack mounting in the modular control center. Standard color monitor controls shall be provided and permanently labeled as to function.

SYSTEM ENGINEERING PANEL

The engineering panel shall provide central control and monitoring of the power supply to the system. The panel circuitry shall be assembled on a rack mounted chassis for installation in the modular control center. The face plate shall be heavy gauge, annodized aluminum and shall have permanent labels designating the function of the various switches and controls. Provisions shall be made on the panel for the following items:

Remote Spring Loaded Generator Start/Stop Switch
AC Volt Meter
AC Frequency Meter (58-62 Hertz)
Generator Hour Meter

CABLE COUNTING METER, LOCAL MECH./REMOTE ELECTRONIC READOUT

The unit shall be equipped with a counting meter designed to accurately measure cable travel in feet and tenths of feet. The metering head shall be constructed of machined cast aluminum parts and shall include the necessary sheaves, wheels and guides. It shall be mounted on the TV reel power level wind assembly. The meter shall be equipped with a local mechanical readout for use at the rear of the unit and an electronic counter which is connected to the Data View System at the operator's station.

DATA VIEW II DATA DISPLAY

A Data View II system shall be provided to permit alpha numeric information to be displayed on the monitor screen and permanently on video tape. Mechanical and audio means of recording the information on the video tape after the time of inspection shall not be acceptable. All circuits shall be of solid state construction and assembled in a rack mount chassis for installation in the modular control center. The faceplate shall be annodized, heavy gauge aluminum and shall have permanent labels designating the function of the various switches and controls. The Data View II shall have a back plate for all cable connectors, each separately indexed and locking and labeled as to purpose. The system shall include a remote, hand-held keypad to allow easy entry of information by the operator at the viewing station. The keypad will be equipped with a sealed membrane Mylar overlay describing each entry function. The keypad will be supplied with a Velcro pad for convenient mounting when not in use.

DATA VIEW II DATA DISPLAY INFORMATION

The system will be capable of displaying 10 lines of alpha numeric information with a maximum of 16 characters per line. Information lines displayed will be as follows:

Line 1	Manufacturer Identification
Line 2	Remark Line (i.e., customer name)
Line 3	Remark Line (i.e., customer location)
Line 4	Manhole Identification (upstream and downstream)
Line 5	Pipe Size (inches)/Pipe Type
Line 6	Pressure (PSI in pounds and tenths) for Joint Test and Seal Units
Line 7	Real Time Clock (hours and minutes/ Date (month, day and year)
Line 8	Footage (distance in feet and tenths) and Flow Direction
Line 9, 10	Keyboard Remark Lines (defect coding) available when a Television Datalog Unit (TDU) is present and active. These entries would then be displayed on the video tape in addition to the information from Lines 1 through 8.

The system will include a full screen instruction guide (menu) for the operator to enter the desired information while operating with the keypad.

DATA VIEW II OPERATING FEATURES

The Data View II system will offer the following operating features:

Select video character brightness (full range white to black).

Select character size (small and large).

Select footage count direction (to or away from unit). Allows system to count footage from 0 to maximum regard less of whether the camera is being towed to the inspection unit from the remote manhole or away from the inspection unit from the local manhole.

Select flow direction (inspection with or against the flow). Allows the operator to record whether the camera is travelling with the flow (+) or against the flow (-) during dry pipe inspection.

Select footage preset (feet and tenths). Allows the operator to input the distance from the center of the manhole to the focal point of the camera after set-up and prior to beginning travel through the pipe.

The pressure line, footage line and time/date line can be displayed independently after the video tape has been identified. The display can be further reduced to show footage only. The information display shall be able to be moved horizontally or vertically over the face of the monitor as required.

A footage memory circuit will be included which prevents the loss of any information in the event the onboard power supply is interrupted. When power is resumed, the complete information display will reappear on the screen.

The unit will have a power consumption of 108 watts at 120 volts (+10% to -20% range) and operate at 50/60 Hz.

VIDEO TAPE RECORDING SYSTEM

A video tape recording system shall be provided to permanently record on video tape any transmission from the closed circuit television camera. The recorder shall be a 12 volt DC powered industrial cassette that can operate from either the on board AC power supply or DC battery supply built in the recorder. An AC adapter will be included to permit operation of the recorder from any 115 VAC power supply. It shall have a minimum recording time of 30 minutes and shall use 1/2" wide tape contained in a cassette. The recorder shall be capable of providing black and white or color tapes. The video tape recorder dimensions shall be approximately 12" X 6" X 14" and the tape transport shall be completely enclosed in a dustproof case.

VIDEO TAPE RECORDING OPERATION REQUIREMENTS

Helical scan recording techniques shall be utilized for recording and playback of the composite video. The composite video signals shall be recorded by four heads. The video recorder shall reproduce in all the following operating modes: 60 cycles field frequency, random sync, 2 to 1 industrial sync, EIA sync and NTSC color. It shall be equipped with an audio channel for narration of the recorded video. Both video and audio signals may be recorded at the same time, or if desired, the audio may be dubbed in at a later time.

VIDEO TAPE RECORDER MOUNTING

The recorder shall be fitted with an annodized, aluminum faceplate and tray designed for rack mounting in the modular control center. Desk mounted recorders that are subject to damage during travel will not be acceptable. The faceplate will allow for complete access to the tray controls and the tape deck for cassette replacement. Recorders that must be removed from the rack mount to replace cassettes will be deemed not acceptable.

MICROPHONE VIDEO TAPE SYSTEM

A microphone for adding audio to the video tapes shall be provided. The microphone shall have a 10,000 OHM rating and shall plug directly into the recorder.

COMBINATION VIDEO TRANSMISSION/TOW CABLE - SC

A combined video and towing cable shall be furnished in a continuous length of not less than 2000'. The cable shall consist of a shielded coaxial center core wrapped with a mylar insulation. A double wrap of steel wires shall encircle the center core to provide the cable with the required towing tensile strength. The complete cable shall be torque balanced to prevent unraveling or stretching of the steel wire wraps. The cable shall have a minimum break strength of 5600 lbs., shall be .270 inches in diameter and withstand external pressures of up to 400 psi. Larger diameter and heavier multi-conductor cables with limited towing strength will not be considered equal.

CABLE TERMINATION CONNECTION - SINGLE CONDUCTOR

The end of the single conductor cable shall be equipped with a metal encased 3 pin molded connector to allow for direct wiring of the cable to the camera. No scotchast assemblies, pigtail connector or wye cables will be necessary. Systems requiring these items will not be considered equal. A specially designed slotted cone will be supplied to trap the cable end connector when it is connected to the camera. The cone shall fit into the rear recessed portion of the camera housing preventing any possible disconnect situation during operation or damage to the end connector. A cable grip will be supplied to transfer the cable towing strength to the camera skid runners. A cable extender shall be furnished to allow for reversing the travel direction of the camera so the main cable does not have to be looped or doubled back.

REMOTE CONTROLLED ELECTRIC POWER TV CABLE ASSEMBLY - SC

A TV cable reel assembly will be supplied with a minimum storage capacity of 2000' of .270 minimum diameter video transmission cable. The reel shall be chain driven and properly reinforced to withstand 200% of the maximum motor torque to insure trouble-free operation. The reel shall be powered by a variable speed electric motor and driven through a multi-gear ratio transmission. The transmission will have a minimum of 5 speeds limit the motor load during varying towing conditions. The reel shall be equipped within automatic level wind assembly to evenly pay out or rewind the cable to prevent pile-ups, entanglements and burying. The reel shall be built into a rugged frame designed for fixed mounting into a unit. The reel drum and level wind shall be open to view to allow for inspection during operation. TV reel systems that are not remotely powered or have manual level wind systems will not be acceptable.

TV CABLE REEL SLIP RING ASSEMBLY - SINGLE CONDUCTOR

The reel shall be equipped with a disc type, continuous contact rotary slip ring assembly. The assembly will be equipped with a minumum of two slip rings to conduct the necessary current and signals through the reel. The rings will be coated with a metallic gold alloy to maximize electrical conductivity and minimize corrosion. The slip ring assembly shall be fully enclosed in a dust and weatherproof protective cover. Spring tension contact brushes will be mounted in the outside coverplate to mate to the rings on the disc. There shall be two brush contacts per ring. It shall not be necessary to remove the cover or open the assembly to change the brush assembly or clean the rings. System equipped with the high maintenance copper slip ring assemblies shall not be considered.

TV CABLE REEL CONTROL, REMOTE AND LOCAL

The TV cable reel shall be equipped with a remote control assembly designed for desk mounting at the operator's station. The controller shall include an on/off switch, clutch control, speed control and an amp meter to indicate motor load during operation. A gear shift selector and linkage shall be provided at the viewing station to operate the reel mounted transmission. The combination of the reel controller and transmission gear shift selector will maximize the efficiency of the television inspection operation and minimize the load on the reel and motor. A speed controller, gear shift selector and on/off switch shall be provided at the reel for local control during set-up.

HIGH PERFORMANCE LIGHTHEAD W/FOCUSED LIGHT - SC

A high performance lighthead will be furnished to provide the proper illumination to inspect 8" to 30" diameter pipes with a color camera or 8" to 60" diameter pipes with a low light level black and white camera. The special focus design shall project ample light to a minimum of 8' down the pipe from the camera. The lighthead shall be of aluminum construction and shall have the necessary contact points and mounts to use two 85 watt bulbs each with an individual multi-faceted reflector. The bulbs and reflectors shall be fully enclosed and protected by glass face plates built into the front of the lighthead. The lighthead will be a 3 piece design to allow for easy disassembly, repair and replacement of component parts such as bulbs and reflectors. The lighthead shall easily mount directly to the front top of the camera. No pigtail connectors will be required.

CAMERA TRANSPORTATION SKIDS 8-30" PIPE SIZES

A transportation skid assembly will be supplied to provide protection for the camera and lighthead from in-line obstructions. A cast aluminum yoke with an inside lining of high friction cushion material will firmly grip the camera while providing maximum protection to the camera and its case. Spacer plates will be provided to attach the bottom skid runners to the yoke. The camera skid assembly shall be adjustable to inspect line sizes from 8" to 30" by substituting spacer plates. This adjustment shall be made without removal of the camera from the yoke assembly. Two corrosion resistant stainless steel skid runners will be provided to tow the camera through the line. The runner ends shall be bent upward to provide a natural lift when encountering pipe offsets and small obstructions. The runner ends shall be machine sloted to insert the ball ends of the camera tow and tag cables. Three corrosion resistant stainless steel skid guards will attach to the yoke to protect the lighthead in the event the camera should be turned over in the line. The skid runners and guards shall be machined to a round and smooth contour to minimize fouling from debris in the sewer lines. Systems using steel runners subject to corrosion or having squared or sharp edges there by accumulating debris, will not be acceptable.

Power to the remote winch shall be furnished through 1000' of 14 gauge power cord. For ease and convenience in handling, the power cord shall be supplied in 500' lengths mounted on a heavy duty cast aluminum reel. A 20' power cord extension will be furnished to connect a power cord reel to an outlet in the unit.

HIGH/LOW VISCOSITY MULTI-GROUT CHEMICAL PUMPING SYSTEM

The High/Low Viscosity Multi-Grout Chemical Pumping System shall have the capability of placing gel type sealants ranging in viscosity from 2 centipoise to 1200 centipoise. Lower viscosity sealants can be delivered at a rate of up to 10 gpm and the higher viscosity sealants can be delivered at a rate of up to 5 gpm. A specially designed position shut off valve and suction assembly will be furnished to accomodate the high viscosity sealants. The pump system shall be engineered so that the chemical delivery volume ratios can be changed with a simple pump substitution or change in the combination of pumps used. The system is capable of accommodating all the commercially available gel type sealants plus most other gel type sealants available in the future. Pumping systems that are designed to use single sealants only or sealants from a single manufacturer will not be acceptable.

PUMP CONSTRUCTION - HIGH/LOW VISCOSITY SYSTEM

The pump frame shall be constructed of aluminum with the plate designed so that up to three pumps can be operated. The unit will be delivered with 1 to 1 and 8 to 1 ratio pumps. All wetted pump parts will be stainless steel for corrosion resistance and longer life. A pump adjustment tool will be furnished. All chemical hoses at the pump shall be equipped with quick disconnects.

PUMP AIR DRIVE SYSTEM

The pumps shall be operated by a single air drive motor so that fixed volumes will be delivered with each stroke. The pump speed (strokes per minute) can be varied depending on the volume of air delivered to the air motor. A stroke counter will be furnished with a remote readout located at the control panel so that the volume of mixed chemical can be measured. The air delivery line shall be equipped with a suitable pressure relief valve to limit the output pressure of the pump to the safe operating pressures of the hoses and interconnect plumbing.

CHEMICAL TANK ASSEMBLY

The system will be supplied with two chemical mixing and storage tanks constructed of a heavy duty non corrosive material. The capacity of each tank shall be no less than 30 gallons to insure an ample chemical supply to seal large voids. With the added capacity of the water storage tank, the total chemical mix capability on board the unit shall be 120 gallons minimum. Each tank shall be equipped with a removable cover, sight level meter and an electric agitator. The agitators shall be used to thoroughly mix chemical components, root inhibitor additives and keep any inert organic fillers in suspension when added to the sealant tanks. The tank assembly will be supplied with a drip tray to drain off any spilled material. Systems that offer a chemical mix capability of less than 100 gallons will not be acceptable.

WATER STORAGE TANK

The system will be equipped with a minimum of a 66 gallon tank for water storage. The tank shall provide the on-board water capacity to mix an additional batch of chemicals without having to prematurely remove the equipment from the line. The tank shall be constructed of galvanized steel, painted and suitable for pressurization within the limits set by the manufacturer. The water system shall be of the air displacement type eliminating the requirements for a water pump. A tank control panel will be furnished to include a pressure regulator, pressure gauge, pressurize/vent valve and an inside fill/drain point. When built into a unit, the tank shall also be connected to a fill/drain point on the outside of the unit.

HOSE REEL ASSEMBLY - ELECTRIC POWERED

The unit will be supplied with a hose reel assembly designed to accommodate a minimum of 500' of quad line hose. When combined with a TV reel, it shall be mounted side by side within a heavy duty frame assembly. The top of the frame will be covered with a 44" X 42" X 3/4" piece of plywood that acts as a workbench area. The air and chemical hoses shall be connected through specially designed stainless steel rotary couplings to allow for continuous operation without disconnection. A dump valve will be attached to the air coupling to allow for quick deflation of the packer elements. An electric motor of sufficient size shall power the reel through a chain drive. The chain drive will be designed to withstand 200% of the maximum motor torque to insure trouble free operation. The reel shall be equipped with a multiple gear ratio transmission to provide a range of torque settings to retrieve the quad line hose when extended to their full length. The motor speed control and gear selector shall be conveniently located at the reel. The hose reel assembly will be supplied with a drip tray to drain off any spilled material.

QUAD LINE CHEMICAL AIR HOSE

The system will be supplied with 500' of quad line hose with a minimum burst pressure of 500 psi. The hose shall consist of two 5/8" ID flow lines for passage of the chemical, one 3/8" ID line for air flow to inflate the packer and one 3/8" ID line for air or water flow to test the joint. One of the chemical flow lines shall be equipped with a special moisture proof inner liner. The four hoses shall be bonded together for ease in movement through the line storage on the reel.

QUAD LINE HOSE TERMINAL ASSEMBLY

Each hose in the quad line grouping will be equipped with a stainless steel quick connect/disconnect fitting with notched locking rings. In addition, each chemical flow line will be equipped with a stainless steel check valve assembly to prevent back flow of the chemicals. A specially designed stainless steel H-block assembly shall be furnished to include the posatryn void pressure sensing transducer, electronic connector to the TV cable and test medium line check valve. Systems that use brass, bronze, plated steel or plastic fittings shall not be acceptable.

QUICK INFLATE/DEFLATE SYSTEM

The control center will include a quick inflate system designed to seat the packer elements on the pipe walls as quickly as possible. The system shall be designed to supercharge the packer inflation lines with high pressure air for a short period of time before normal inflation pressures resume to seat the elements. A timer shall be furnished to control the inflation time when using different packers for varying line sizes. A quick deflation system will be supplied to receive the pressure as quickly as possible in the packer rubber elements. Rapid seating and deflation of the elements is necessary to shorten the testing and sealing cycle time thereby increasing the production rate for each operation. Systems using the slower manual inflate systems will not be deemed equal.

TEST N' SEAL CONTROL CENTER

The control center shall be designed to give the user all the necessary controls for regulating the inflation pressures of the packer, quick inflation and deflation of the packer, air or liquid testing of each joint, chemically sealing leaking joints and constant monitoring of the packer void pressure during the testing and sealing operation. Units not having these controls will not be considered equal for this application.

POSATRYN REMOTE PRESSURE SENSING SYSTEM

The unit shall be equipped with a special void pressure sensing device at the packer. Any pressure changes will be transmitted electronically to an LED readout in the panel at the operator's station. The panel shall be equipped with an electric timing device so that the pressure change in the void can be monitored during a given period of time. The posatryn system shall allow for constant monitoring of the packer void pressure during both the joint testing and sealing operations. Systems that manually measure pressure changes at the packer with a gauge or at the panel through 500' of hose shall not be acceptable.

PANEL CONTROLS

The control panel shall have all the necessary pump operating controls to include pump start/stop, pump pressure regulator and a stroke counter for chemical volume measurement to insure proper line sealing under varying soil conditions. The piping, valves and gauges where necessary shall be of stainless steel or other corrosion resistant material to reduce maintenance on the system. All connections necessary for operation of the system shall be completely installed.

AIR/WATER TEST SYSTEM

The control center shall be equiped with the necessary air and liquid testing systems. If air testing is selected, it shall allow the operator after proper inflation of the packer, to pressurize the void area in the packer with a regulated amount of air ranging from 0 to 10 psi and to electronically read any subsequent pressure drop in the void chamber on the readout at the operating station. If liquid testing is selected, it shall allow the operator after proper inflation of the packer, to fill the void area in the packer with liquid. A flow meter in the panel shall allow the operator to calibrate the amount of liquid loss from the void chamber between .125 and 1.0 gpm. The system will allow the operator to electronically read anyn variance in the resultant liquid/pressure relationship in the void chamber on the readout at the operating station. Systems that limit the testing capabilities to either air or water rather than both will not be considered equal.

ELECTRIC AIR COMPRESSOR

The system shall be equipped with an air compressor with a displacement rating of 7.35 cfm at 125 psi. The unit shall be a single stage multi cylinder air cooled type. It shall be driven by an electric motor that shall supply 1-1/2 HP. Ample power for the electric motor shall be available from the generator. The compressor shall be equipped with an automatic unloader system, which shall stop the electric motor when the air receiver is pressurized to the operating level. The compressor shall be permanently mounted inside the unit and shall have adequate access for maintenance.

JOINT TESTING AND SEALING PACKERS - SMALL DIAMETER PIPES

Joint testing and sealing packers shall be furnished that when inflated, create a void at the defective joint into which the chemical sealant or root kill solutions are injected. The packers shall be designed to have the smallest outside diameter to allow maximum clearance of pipe imperfections and obstructions while still allowing the packer, when inflated, to seat firmly at the defective joint. Each small diameter packer shall consist of two aluminum cylinders each fitted with an air inflatable rubber sleeve, an aluminum center casting and two aluminum end castings. When assembled, the cylinder/sleeve components are fitted into the machined center and end castings to form an air tight unit. Full length threaded bolts allow for fitting adjustments and complete disassembly for easy field maintenance, repair or replacement. The rubber sleeves are manufactured of a resilient material with a minimum thickness of 3/8 inch to resist abrasion, cuts and punctures. The center casting shall be fitted with the fluid supply lines and chemical exit port(s). The end castings shall incorporate a skid design to protect the inflatable elements from excessive wear of damage while being pulled through the pipe. This design will apply to packers manufactured for pipe sizes 6-8-10-12-15 inch. One packer is used for a specific pipe size to eliminate weakening of the rubber sleeves. The buyer shall identify the packer sizes required in the component list. The packer hose fittings will be stainless steel and of the quick connect/disconnect type. All packers will be designed to provide the maximum flow through backup while operating in the line. Packers using damage prone inner tube type rubber inflatable elements or with limited flow through capacity will not be deemed equal.

JOINT TESTING AND SEALING PACKERS - SMALL DIAMETER PIPES

Joint testing and sealing packers shall be furnished that when inflated, create a void at the defective joint into which the chemical sealant or root kill solutions are injected. The packers shall be designed to have the smallest outside diameter to allow maximum clearance of pipe imperfections and obstructions while still allowing the packer, when inflated, to seat firmly at the defective joint. Each small diameter packer shall consist of two aluminum cylinders each fitted with an air inflatable rubber sleeve, an aluminum center casting and two aluminum end castings. When assembled, the cylinder/sleeve components are fitted into the machined center and end castings to form an air tight unit. Full length threaded bolts allow for fitting adjustments and complete disassembly for easy field maintenance, repair or replacement. The rubber sleeves are manufactured of a resilient material with a minimum thickness of 3/8 inch to resist abrasion, cuts and punctures. The center casting shall be fitted with the fluid supply lines and chemical exit port(s). The end castings shall incorporate a skid design to protect the inflatable elements from excessive wear of damage while being pulled through the pipe. This design will apply to packers manufactured for pipe sizes 6-8-10-12-15 inch. One packer is used for a specific pipe size to eliminate weakening of the rubber sleeves. The buyer shall identify the packer sizes required in the component list. The packer hose fittings will be stainless steel and of the quick connect/disconnect type. All packers will be designed to provide the maximum flow through backup while operating in the line. Packers using damage prone inner tube type rubber inflatable elements or with limited flow through capacity will not be deemed equal.

JOINT TESTING AND SEALING PACKERS - SMALL DIAMETER PIPES

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JOINT TESTING AND SEALING PACKERS - SMALL DIAMETER PIPES

Joint testing and sealing packers shall be furnished that when inflated, create a void at the defective joint into which the chemical sealant or root kill solutions are injected. The packers shall be designed to have the smallest outside diameter to allow maximum clearance of pipe imperfections and obstructions while still allowing the packer, when inflated, to seat firmly at the defective joint. Each small diameter packer shall consist of two aluminum cylinders each fitted with an air inflatable rubber sleeve, an aluminum center casting and two aluminum end castings. When assembled, the cylinder/sleeve components are fitted into the machined center and end castings to form an air tight unit. Full length threaded bolts allow for fitting adjustments and complete disassembly for easy field maintenance, repair or replacement. The rubber sleeves are manufactured of a resilient material with a minimum thickness of 3/8 inch to resist abrasion, cuts and punctures. The center casting shall be fitted with the fluid supply lines and chemical exit port(s). The end castings shall incorporate a skid design to protect the inflatable elements from excessive wear of damage while being pulled through the pipe. This design will apply to packers manufactured for pipe sizes 6-8-10-12-15 inch. One packer is used for a specific pipe size to eliminate weakening of the rubber sleeves. The buyer shall identify the packer sizes required in the component list. The packer hose fittings will be stainless steel and of the quick connect/disconnect type. All packers will be designed to provide the maximum flow through backup while operating in the line. Packers using damage prone inner tube type rubber inflatable elements or with limited flow through capacity will not be deemed equal.

JOINT TESTING AND SEALING PACKERS - LARGE DIAMETER PIPES

Joint testing and sealing packers shall be furnished that when inflated, create a void at the defective joint into which the chemical sealant or root inhibitor solutions are injected. The packers shall be designed to have the smallest outside diameter to allow maximum clearance of pipe imperfections and obstructions while still allowing the packer, when inflated, to seat firmly at the defective joint. All large size packers beginning at 18" shall be the compact type with the maximum width not to exceed 19.5 inches. Packers beginning with the 24 inch size shall be a collapsible type so they can be inserted through a 21 inch standard manufactured manhole without having to remove the ring or cone. Large packer styles that require removal of the manhole ring and cone for entry shall not be acceptable. Each large diameter packer shall consist of an aluminum cylinder fitted with an air inflatable rubber sleeve. The single sleeve shall be constructed of a multi-ply rubber for increased strength and flexibility. The rubber thickness shall be 3/4" minimum to resist cuts and abrasions. All large size packers shall be equipped with top and bottom skid guards to protect the inflatable element from excessive wear or damage while being pulled through the pipe. The bottom skids shall be fitted with wheels to minimize the towing drag during movement through the pipe. The skid guards and wheel assembly on the collapsible type shall fold inside the packer during the insertion or removal operation. One packer is used for a specific pipe size rather than one for several sizes to eliminate over stretching and weakening of the rubber sleeves. The buyer shall identify the packer sizes required in the component list. The packer hose fittings will be stainless steel and of the quick connect/disconnect type. All packers will be designed to provide the maximum flow through capacity to reduce the backup of water while operating in active lines. Packers using damage prone inner tube type rubber inflatable elements or with limited flow through capacity will not be deemed equal.

CHEMICAL HANDLING/SAFETY PACKAGE

The system shall be equipped with chemical handling and measuring equipment to be used with various gel type sealants available. These items will include two mixing paddles, a chemical scoop and a measuring cup. A chemical safety package will be supplied since all manufacturers of sewer line joint sealants have recommended safe handling procedures. The safety package will include goggles, gloves, respirator w/replacement cartridges and a chemical waste disposal kit.

CHEMICAL SEALANT

Sufficient chemical sealant materials shall be supplied for training purposes (if required) with the amounts identified in the component list. The sealant material shall be a gel type with viscosities ranging from 2 centipoise to 1200 centipoise. The gel will penetrate the soil outside the pipe joint and/or fill an open gasket area with the pipe joint to form a barrier between the groundwater and the pipe. Any residue shall be easily removed from the pipe joint. Open celled sealants that allow passage of groundwater will not be acceptable.

The buyer will determine the type of sealant desired based on his job requirements and the performance of the material.

CABLE AND HOSE MANHOLE GUIDE SYSTEM

The necessary pulley assemblies will be furnished to protect the TV cable, winch cable and hose from damage during operation in pipe sections. They shall be constructed of aluminum to minimize weight and equipped with corrosion resistant pulleys. The minimum bend radius of the pulley assembly shall be 6".

Quick lock extension poles will be supplied to connect to the pulley assemblies. The poles shall be constructed of 1" galvanized pipe with a specially designed quick lock assembly consisting of a compression spring and twist lock type connectors. The number of 5' long poles required for both the remote and local manhole set-ups will be shown on the component list. Manhole adapter hooks will be supplied to secure the extended pulley and pole assembly at the manhole ring. A manhole top roller assembly will be furnished to guide the cables and hoses into the manhole. The top roller shall consist of a welded steel angle iron frame with the necessary pulleys.

The complete downhole equipment assembly shall be designed for quick solid installation in various sizes of pipe and depths of manholes from above ground. Downhole equipment systems requiring manhole entry for installation shall not be acceptable.

TV/SEAL MAINTENANCE TOOL KIT

A kit containing sets of tools and expendable spare parts shall be furnished in a quality metal box. The kit shall contain the necessary items to field test, adjust and repair a number of components on the television/test/seal systems. This kit shall include items such as: volt OHM test meter (0-600 milliamps) soldering kit, allen wrench set, cable repair tools, check valve test meter and adjustment tool and hose end fitting seals.

OPERATING MANUAL

Bound operating manuals shall be furnished that contain the recommended operating instructions and maintenance procedures for all systems and components being furnished. The instructions shall provide step-by-step use methods and include adequate illustrations, diagrams and other aids. Special attention shall be given to safety considerations for personnel and the equipment.

SYSTEMS PARTS BOOK

A parts book supporting field repair and replacement of the various components of the delivered systems will be furnished. This book will include exploded or cutaway drawings of numerous components and assemblies with each drawing referencing a manufacturer's part number and description.

OPERATING AND MAINTENANCE LOG BOOK

A hard bound log book will be furnished to record the results of the various pipeline operations. It will provide ample space to record pipeline information, defects, locations and accomplishments. A minimum of 50 log sheets will be furnished. An additional book will be furnished to keep a full record of use and maintenance on the equipment.

INSTRUCTION AND TESTING

The supplier shall fully instruct and test buyers employees in the operation of the equipment furnished after delivery. The instruction period shall be of sufficient duration (number of days shown on the component list) to fully familiarize the buyers operating personnel. The instruction and testing shall be conducted by the supplier's field service technician and shall include component familiarization, theory of operation, equipment operation, field procedures, techniques of use, troubleshooting, maintenance recording and logging of sewer conditions and safety procedures.

DETAILED SPECIFICATIONS

CUES, INC. STANDARD WARRANTY

CUES, Inc. ("CUES") warrants that all parts, components, and equipment manufactured by CUES shall be free from defects in material and workmanship under normal use and service for which it was intended for a period of twelve (12) months from the date of shipment of materials by CUES to the purchaser. CUES'S obligation under this warranty is limited, at CUE'S option, to replacing or repairing, free of charge, F.O.B. CUE'S service facility, any defective materials. For all warranty claims, the materials must be returned in accordance with CUES Material Return Policy; freight, duties and insurance prepaid to a place designated by CUES.

Major items of equipment such as vehicles, generators, etc., furnished, but not manufactured by CUES, will be covered only under the warranty of the third party manufacturer of such equipment. Expendable parts such as light bulbs, fuses, connectors, etc., are excluded from this warranty.

Purchaser must notify CUES of a breach of warranty not later than the last day of the warranty period; otherwise, such claims shall be deemed waived.

CUES does not warrant the materials to meet the requirements of the safety codes of any federal, state, municipal or other governmental or administrative jurisdiction. Purchaser assumes all risk and liability whatsoever resulting from the use of it's products, whether used singly or in combination with other products, machines or equipment.

This Warranty shall not apply to any materials, or parts thereof, which have (a) been repaired or altered by anyone other than CUES without CUE'S written consent, (b) been subject to misuse, abuse, negligence, accident, or damage, (c) not been installed or operated in accordance with CUE'S printed instructions, or (d) been operated under conditions exceeding or more severe than those set forth in the specifications of design tolerance of the equipment.

THIS WARRANTY AND THE OBLIGATION AND LIABILITIES OF CUES HEREUNDER ARE EXCLUSIVE AND IN LIEU OF (AND PURCHASER HEREBY WAIVES) ALL OTHER WARRANTIES, GUARANTEES, REPRESENTATIONS, OBLIGATIONS, OR LIABILITIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDLESS WHETHER OR NOT OCCASIONED BY CUES'S NEGLIGENCE.

CUES SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE RESULTING, DIRECTLY OR INDIRECTLY, FROM THE USE OR LOSS OF USE OF THE MATERIALS, OR FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, ECONOMIC LOSSES, LOSS OF PROFITS, LOSS OF BUSINESS, OR LOSS OF BUSINESS OPPORTUNITY. Without limiting the generality of the foregoing, this exclusion from liability embraces Purchaser's expenses for downtime or for making up downtime, damages to property, and injury to or death of any persons.

CUES neither assumes nor authorizes any person (including employees, agents, or representatives of CUES) to assume for it any other liability, guarantee, or warranty in connection with the sale or use of the materials, and no oral agreements, warranties, or understandings exist collateral to or affecting this warranty.

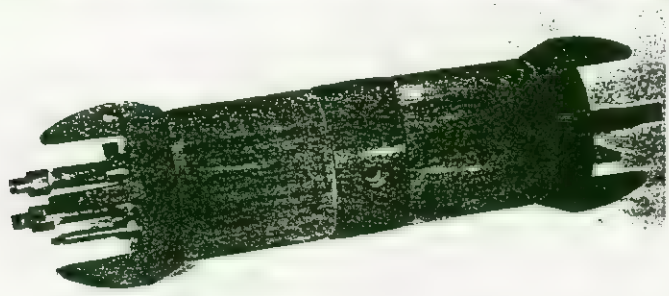
This warranty shall not be extended, altered, modified, or waived except by a written instrument signed by CUES.

[WARRANTY.WPS:S] REVISED 06/26/89/DS

CUES
Orlando, Florida 32805
Telephone 305/849-0190

Q's toll free phone 800-327-7791

Q-seal Packer



Q-SEAL PACKER BEFORE INFLATION

Q-SEAL PACKER INFLATED

The Q-seal Packer is engineered and built by CUES, the sewer maintenance equipment specialists. It is used to isolate sewer pipe joint leakage during the Q-seal "gel" injection operation. After the packer is positioned and expanded, the liquid Q-seal is pressure injected through the openings in the collar, into the leak point and surrounding soil. The Packer's special continuous flow mixing chamber insures uniform "gel" timing of the two part Q-seal chemicals. Check valves prevent Q-seal gelation in the distribution hoses.

The Packer's skids and exclusive tow assembly easily guide it over line obstructions. In addition each Q-seal packer is designed to operate in two pipe sizes so that in emergency situations the smaller packer may be used for badly offset joints.

Q-seal Packers are equipped for air pressure testing the joints for leakage. This means that your crew can pre-test each pipe joint as the repair operation proceeds through the line.

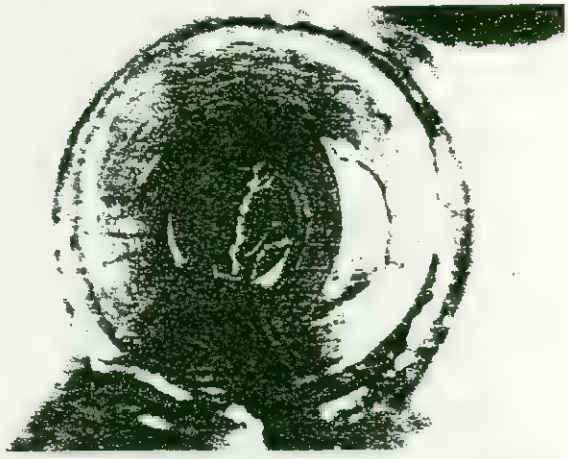
The rugged, neoprene inflatable elements are chemical and abrasion resistant. They can be easily replaced in the field, eliminating down time.

CUES labor saving equipment is built to last by people who know sewerline maintenance.

Q-seal Packers

Description	Number	Approx. Shipping Weight
6 in. packer	2706	12 lbs.
8 in. packer	2708	23 lbs.
10 in. packer	2710	32 lbs.
12 in. packer	2712	50 lbs.
15 in. packer	2715	65 lbs.
18 in. packer	2718	85. lbs.
21 in. packer	2721	100 lbs.
24 in. packer	2724	100 lbs.

Methods, materials and equipment covered by U.S. Patents: 3,168.908 3,103,235 2,971,259 3,168,909 and other patents pending.



INTERNAL VIEW OF LEAKING SEWER PIPE

SAME VIEW AFTER Q-SEAL INJECTION

CARBORUNDUM

RVC-360^{otm} CAMERA SYSTEM
SINGLE CONDUCTOR COLOR

COMPONENT LIST

QTY DESCRIPTION

1 RADIAL VIEW CAMERA System Single Conductor to include:
- 1 3" Diameter Solid State Color Sewer TV Camera with a Dome Enclosed 360 Degree Side Viewing Lens, Remote Adjustable Optical Focus, Automatic Light Compensating Iris and Automatic White Balance Circuitry, Single Conductor, NTSC Color Standard
- 1 Small Lens Cover
- 1 Large Lens Cover
- 1 Camera Storage and Transportation Case
- 1 Camera Test Cable Assembly
- 1 Camera Side Viewing Lens Controller with a 360 Degree Joystick, Remote Focus and Remote Iris Control
- 1 Radial View Camera - High Intensity Side Viewing Lighting System

DETAILED SPECIFICATIONS

RADIAL VIEW CAMERA - SOLID STATE COLOR - SINGLE CONDUCTOR

The radial view camera will be specifically designed to provide a close up view of sewer pipe walls through the turning and rotation of the lens enclosed in a sealed dome. The unit will be color and shall be designed for operation through 2000' of single conductor cable in sanitary and storm sewers. Converted studio, surveillance or underwater cameras not originally designed for high vibration and impact service shall not qualify as being equal. Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibration normally sustained while being pulled through a pipe. The image pickup device shall be solid state incorporating the latest technology. The camera outside diameter shall be 3 inches to allow for inspection of small size pipe. Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C.

RADIAL VIEW CAMERA - SOLID STATE COLOR - REQUIREMENTS - SINGLE CONDUCTOR

The camera shall be capable of providing 320 lines of horizontal resolution and 350 lines of vertical resolution. The image pick-up device will contain in excess of 250,000 picture elements (pixels). The high resolution image sensor will not burn even when pointed at direct sunlight. Scanning shall be 525 lines, 60 fields, 30 frames, interlaces 2:1- NTSC color standard. The camera shall develop a true color and transmit a sharp image picture on video bandwidths only. Picture transmission systems that require the use of R.F. supressors and are subject to local transmitter interference, shall not qualify as being equal. Full color video bandwidths shall be provided with no sacrifice of low frequency response. There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart. The composite video signal derived from the video camera shall be 1.0V (140 IRE Units) at the monitor after transmission through 2000' of single conductor cable. The camera shall be equipped with an automatic iris to control the illumination range for an acceptable picture between 30 and 10,000 Lux. Geometrical distortion of the image shall not exceed 2%.

RADIAL VIEW CAMERA SOLID STATE COLOR - SINGLE CONDUCTOR - TECHNICAL SPECIFICATIONS

Features:
1. Remote controlled focus and iris
2. Automatic white balance
3. Low lag and high resistance to image burn-in
4. High resistance to vibration or mechanical shock
5. Precise image geometry and long life
6. Excellent color rendition and low light sensitivity
7. Image pickup device (CCD) that has a lower random noise feature in comparison with other devices (i.e. MOS or CID)

Electrical Specifications:

Image pick-up	Interline transfer CCD color device
Picture elements (pixels)	510 (H)x492 (V)=250,920 elements
Sensing area	8.8x6.6mm (same as 2/3 inch camera tube)
System standard	NTSC color 525 lines, 60 fields/second
Supplied lens	8.5mm (F1.6) with auto iris with manual override
Lens mount	Standard "C" mount 1"x32 threads
Horizontal resolution	320 lines
Vertical resolution	350 lines
S/N ratio	48db
Minimum illumination	30 lux (F1.4)
Color temperature	Auto: 2100 degrees K - 10,000 degrees K
Power requirement	Single conductor 50-150 VDC 20 watts
Video output	1.0 volt p-p 75 OHMS
Vibration	7G (11 Hz to 200 Hz)
Shock	70G
Geometric distortion	Not to exceed 2%

RADIAL VIEW CAMERA - 360 DEGREE OPTICAL LENS - REMOTE CONTROLLED

The camera shall be equipped with a standard C mount 8.5mm F 1.6 wide angle lens. The mechanical design of the lens shall allow it to turn, and rotate 360 degrees to provide a side view of the entire barrel of the pipe. It shall be designed to maintain proper orientation of the picture while the lens is turning and rotating. The lens shall be completely enclosed in a dome to protect against damage. Cameras incorporating mirrors for side viewing that invert and disorient the picture or cameras that use exposed rotating heads subject to damage will not be acceptable. The lens shall be an auto iris type with a manual override remotely controlled from the viewing station.

RADIAL VIEW CAMERA - CONTROLLER

The side viewing and 360 degree rotational lens shall be remotely controlled from the operator's station. The controller shall be equipped with a joystick to turn the lens in four different directions and rotate the lens to allow viewing around the barrel of the pipe. The controller shall be equipped with a remote focus switch for a quick close-up view of defects in the pipe crown, invert and sidewalls. The controller shall be equipped with a remote iris override switch. The controller shall be designed for quick hook up to the power control unit when the Radial View Camera is being used. It shall be compact and easily stored while not in use.

RADIAL VIEW CAMERA - HIGH INTENSITY SIDE VIEWING LIGHTING SYSTEM

A high intensity lighting system will be furnished to provide the proper illumination to inspect down the pipe along with the pipe crown, invert and sidewalls while using the Radial View Camera. The lighting system will be equipped with multiple enclosed bulbs designed to maximize illumination for side viewing. The lighting system will be designed for 8" to 30" pipe sizes.

RADIAL VIEW CAMERA - PROTECTIVE HOUSING

The camera shall be housed in a high strength stainless steel tube 3 inches in diameter and 22 inches long. The front of the camera will be equipped with an optically clear dome to house the side viewing and 360 degree rotational lens. The housing shall be sealed at the factory to withstand external pressures in excess of 2000 psi without damage or leakage. There shall be no external mechanical adjustment points in the housing. A dome cover will be provided to protect the camera at the job site and during storage.

SOLID STATE COLOR CAMERA CONTROL CIRCUITRY

The color camera shall be equipped with the necessary circuitry to allow for the remote adjustment of the optical focus and automatic iris from the power control unit at the viewing station. The camera shall be equipped with the necessary circuitry to automatically white balance the color picture to the light source within a range of 2200 to 3200 degrees K. Color cameras that require manual external focus or iris adjustments shall be deemed not acceptable. The camera shall be calibrated with both color bench test and picture analysis equipment at the factory. Each camera system shall be equipped with a test cable to allow for the direct rings, cable and any applicable connectors for testing.

CAMERA STORAGE AND TRANSPORTATION CASE

A damage resistant case will be provided for the camera while it is in storage or during transport including shipping on commercial carriers. The interior of the case shall contain a styrofoam saddle and a lid installed styrofoam yoke to firmly hold the camera and protect it from damage. The case shall be equipped with metal closing latches.

DIGEST SHEET

TITLE OF ORDINANCE: Special

DEPARTMENT REQUESTING ORDINANCE: Purchasing

SYNOPSIS OF ORDINANCE: An ordinance approving the award of Reference No. 886 for TV truck for the WPC Maintenance Department. The cost reflects the most responsive vendor.

S-89-10-21

EFFECT OF PASSAGE: TV truck to include sewer main grouting system. This equipment is to be used primarily in St. Joe Twp to work on a five (5) year grouting program aimed at reducing infiltration of storm water which is overloading the WPC Plant.

EFFECT OF NON-PASSAGE: Will not be able to effectively reduce problems of overloading at the WPC Plant or maintain grouting program for St. Joe area.

MONIES INVOLVED: Cues $164,500.00

PRICE AGREEMENT:

PURCHASE ORDER: Yes

SOURCE OF FUNDING: WPC Maintenance 514-532-B101-4441

PRIOR APPROVAL: DATE:
(IF APPLICABLE)

BILL NO. S-89-10-21

REPORT OF THE COMMITTEE ON CITY UTILITIES

THOMAS C. HENRY, CHAIRMAN
MARK E. GiaQUINTA, VICE CHAIRMAN
LONG, BURNS, TALARICO

WE, YOUR COMMITTEE ON CITY UTILITIES TO WHOM WAS REFERRED AN (ORDINANCE) ~~(RESOLUTION)~~ approving the awarding of Reference #886 by the City of Fort Wayne, Indiana, by and through its Department of Purchasing and CUES, INC., for the Water Pollution Control Maintenance Department

HAVE HAD SAID (ORDINANCE) ~~(RESOLUTION)~~ UNDER CONSIDERATION AND BEG LEAVE TO REPORT BACK TO THE COMMON COUNCIL THAT SAID (ORDINANCE) ~~(RESOLUTION)~~

DO PASS	DO NOT PASS	ABSTAIN	NO REC
Thomas C. Henry			
Mark E. GiaQuinta			
Samuel J. Talarico			
Vivian G. Burns			

DATED: 10-24-89.

Sandra E. Kennedy
City Clerk